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NASA CR-156814



**EVALUATION PROGRAM
for
SECONDARY SPACECRAFT CELLS**

(NASA-CR-156814) EVALUATION PROGRAM FOR
SECONDARY SPACECRAFT CELLS: SYNCHRONOUS
ORBIT TESTING OF SEALED NICKEL CADMIUM CELLS
(Naval Weapons Support Center, Crane, Ind.)
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**SYNCHRONOUS ORBIT TESTING
OF
SEALED NICKEL-CADMIUM CELLS**

prepared for
GODDARD SPACE FLIGHT CENTER

CONTRACT S-53742-AG

**WEAPONS QUALITY ENGINEERING CENTER
NAVAL WEAPONS SUPPORT CENTER
CRANE, INDIANA**



DEPARTMENT OF THE NAVY
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RESULTS OF
CONTINUOUS SYNCHRONOUS ORBIT TESTING
ON
SEALED NICKEL-CADMIUM CELLS
WQEC/C 77-134 9 JUNE 1977

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Enclosure (1)

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REPORT BRIEF
RESULTS OF
CONTINUOUS SYNCHRONOUS ORBIT TESTING
ON
SEALED NICKEL-CADMIUM CELLS

Ref: (a) NASA Purchase Order S-53742-AG
(b) NASA Work Sheet of Apr 1967

I. TEST ASSIGNMENT BRIEF

A. In compliance with reference (a), this activity began real time synchronous orbit testing on sealed nickel-cadmium cells on 18 July 1967. The evaluation followed the program outline of reference (b).

B. The purpose of this evaluation is to gather performance information concerning sealed nickel-cadmium cells operating under a synchronous orbit regime. Such a regime simulates a space satellite maintaining a position over a fixed point on earth as the earth rotates on its axis and revolves about the sun.

C. This report is a continuation of NAD Crane reports QE/C 71-183 and QEEL/C 73-302 and also includes 9, 5-cell packs that have not been previously reported.

II. SUMMARY OF RESULTS

A. General

1. A temperature of 40°C is very detrimental to nickel-cadmium cells. At this temperature, the measured capacity of new cells averaged slightly more than half the manufacturer's rated capacity. Exposure to synchronous orbit testing at this temperature usually yields less than 6 years of life.

2. Performance at -20°C also presents the low capacity problem encountered at 40°C. The basic operational difference required is in the modes of trickle charges. The trickle charge rate must be fairly substantial (C/20) for the 40°C temperature (to maintain capacity); but must be very low (C/250) for the -20°C temperature or put on open circuit in order to keep the cell voltages at an acceptable level and to keep the pressures down.

3. The capacity check, performed at the middle of each show period, provides a temporary reconditioning effect on the cells in that the end-of-discharge voltages are higher, for approximately 7 to 10 days, following the capacity check than they were 7 to 10 days prior to the capacity check.

4. All the test packs at -20°C and 40°C have either failed or were discontinued because of low capacity. The failure mechanism at the two temperatures appears to be completely different.

5. Those packs at test temperatures of 0° and 10°C have delivered the best capacity during life. Packs tested at 20°C showed better life capability than packs at -20°C and 40°C .

B. Specific

1. GE 6.0 ah.

a. The packs at 0°C (3) and 25°C (1) have completed 17 eclipse seasons with two cell failures in one 0°C pack at 80% DOD and one cell failure in the 25°C pack at 40% DOD.

b. The cell failures in the pack at 25°C and 40% DOD had its cell failure occur at the beginning of its 16th eclipse seasons. This cell was allowed to remain on test and did reverse for three consecutive days, during the discharge period, until it shorted. The cell would reverse to -0.030 volts when it first crossed the 0.0 volt threshold, then became less negative as the discharge continued. Its end-of-charge voltage would be approximately 1.30 volts. There were no pressure problems during this period.

c. The packs at 40°C and -20°C were discontinued following eclipse seasons 11 and 12 respectively, because of low capacity. The 40°C pack never delivered the required 40% depth-of-discharge throughout its 11 eclipse seasons. The -20°C pack failed to deliver the required 40% depth-of-discharge during eclipse season 10.

d. The pack at 0°C and 80% DOD had a cell fail, because of low voltage during the 4th eclipse season and also had one cell short at the beginning of its 11th period.

e. Cadmium-cadmium coulometers proved to be effective charge control devices, but they have shorter lives than the cells they are tested with.

f. Figure 1 shows the capacity out for each eclipse season.

2. GE 12.0 ah.

a. Those packs at 0° and 20°C have completed 14 eclipse seasons without a cell failure although two cells were removed due to failure of the weld between the fill tube and cover. This failure was attributed to mechanical fatigue due to vibration and accidental jarring of the transducer assembly.

b. The packs at 40°C and -20°C were discontinued because of low capacity, after 5 and 10 eclipse seasons respectively. These packs failed to deliver the required 60 and 80% depth-of-discharge, respectively, during elipse seasons 2 and 4.

c. The pack at 0°C and 80% DOD had delivered the most capacity during the capacity checks, whereas, the pack at 20°C and 80% DOD has delivered the least. All the packs at 0° and 20°C have delivered their required percent depth-of-dicharge. The 0°C packs increased in capacity during the first four eclipse seasons.

d. As the life of the packs increase, their auxiliary electrodes, during the sunlight periods, appear to become "desensitized" to the oxygen produced during charge. This results in high cell voltages and pressures for 2 to 7 days at the beginning of each shadow period until the auxiliary electrodes regain their sensitivity.

e. The trickle charge current was reduced from C/60 to C/80, for the 0°C packs, due to high cell voltages and pressures during the sunlight periods.

f. Figure 2 shows the capacity out for each eclipse season.

3. GE 12.0 ah (IUE).

a. This pack has completed one eclipse season.

4. GU 15.0 ah (ATS 6).

a. The engineering cells have completed 8 eclipse seasons, two at GSFC; and the flight cells have completed four seasons with no cell failures.

b. The flight cells have completed 4 eclipse seasons. During the capacity check, the pack's capacity has decreased from 19.0 ah (seasons 1 and 2) to 12.4 ah (season 4). This drop in capacity followed a test change to where the pack is now cycled during its sunlight periods as opposed to floating at a voltage limit.

c. Figure 3 shows the capacity out for each eclipse season.

5. EP 3.0 ah (SMS and GOES B & C)

a. The first SMS pack completed the shadow portion of its first eclipse season before its control unit malfunctioned, which forced discharged the cells to negative values. The pack was then discontinued.

b. The other SMS pack has completed 4 eclipse seasons and its capacity has dropped from 4.20 ah, during its first season, to 2.2 ah during the last season.

c. The GOES B & C pack has completed one eclipse season.

d. Figure 3 shows the capacity out for each eclipse season for the SMS pack.

6. EP 12.0 ah.

a. These packs have completed 9 eclipse seasons without a cell failure although one cell was removed due to its pressure gauge assembly leaking.

b. The 10 and 0°C packs increased in capacity for the first 5 and 6 eclipse seasons respectively, whereas, the 20°C pack has decreased in capacity each eclipse season.

c. These packs are recharged during the shadow periods by charging to a pack voltage limit. The cell voltages, in each pack, are unbalanced at the end of charge.

d. These packs were originally to float at their voltage limits during the sunlight periods; but due to cell unbalance, the pack temperatures increased causing the charge current to increase while the cell voltages decreased, therefore, the packs are now placed on a trickle charge during these periods.

e. Figure 3 shows the capacity out for each eclipse season.

CAPACITY CHECKS

WQEC/C 77-134

AMPERE HOURS

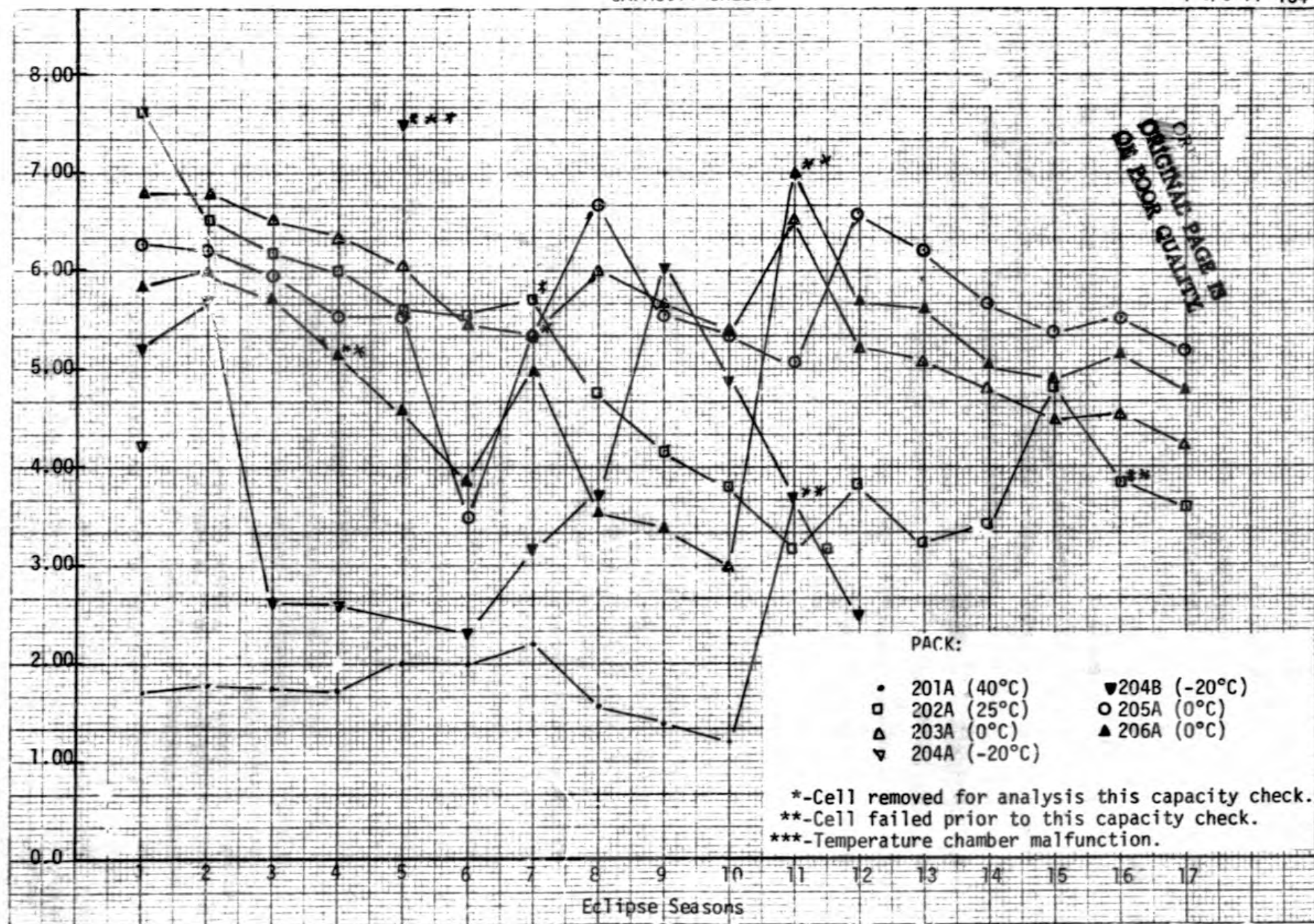


FIGURE 1

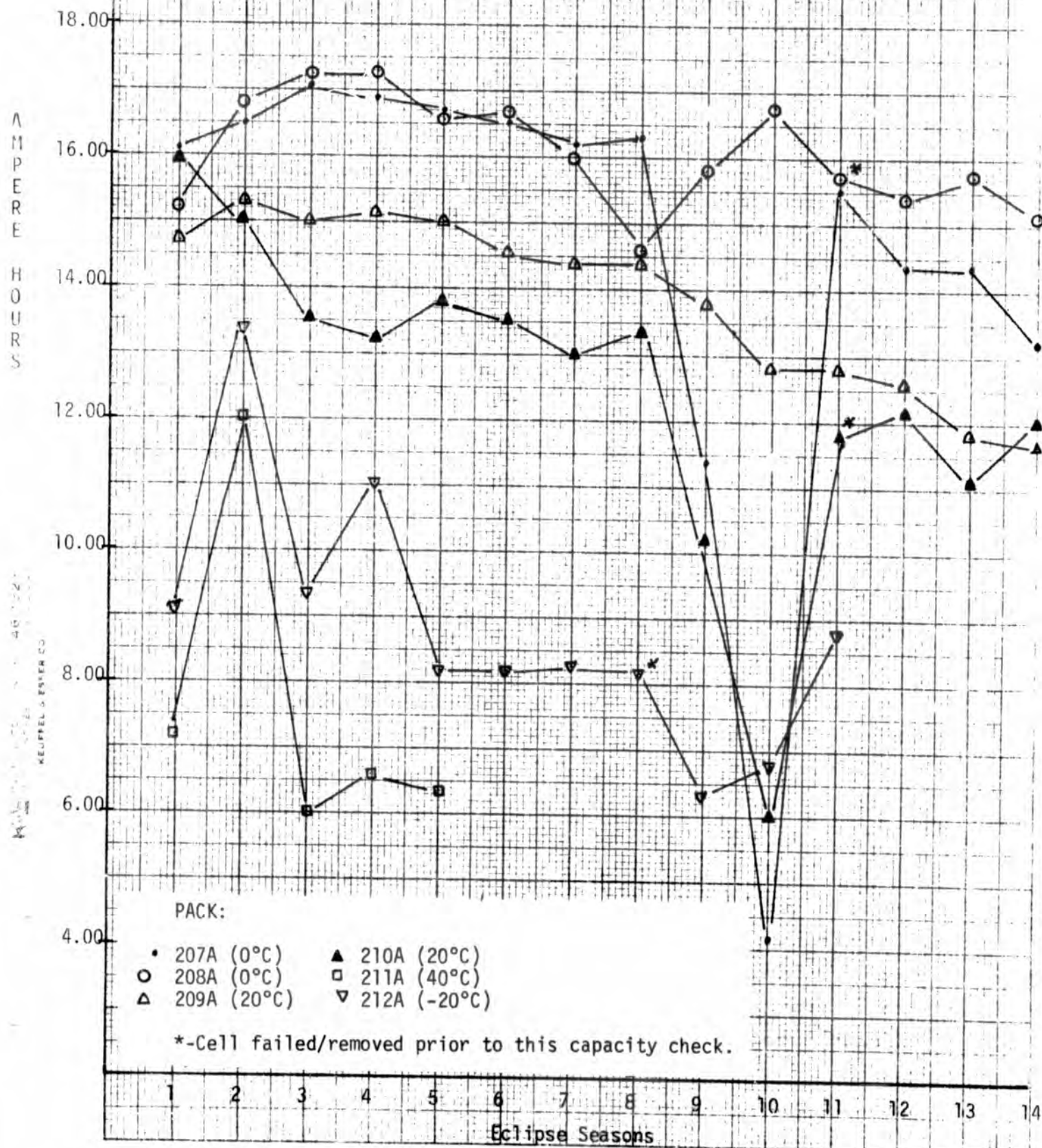


FIGURE 2

CAPACITY CHECKS

A
M
P
E
R
E

H
O
U
R
S

22.00
20.00
18.00
16.00
14.00
12.00
10.00
8.00
4.00
2.00

ORIGINAL PAGE IS
OF POOR QUALITY

PACK:

- 221A (20°C)
- 222A (10°C)
- △ 223A (0°C)
- △ 226A (20°C)
- ▽ 226B (20°C)
- 227B (20°C)

*-Cell failed/removed prior to this capacity check.

Eclipse Seasons

FIGURE 3

Explanation of Symbols

1. Special Symbols:

AE: Auxiliary Electrode
ah: ampere-hour
AH: Test Ampere-Hour Rating
Amps: Amperes
ATS: Applications Technology Satellite
DOD: Depth of Discharge
ECL: Eclipse
EOC: End-of-Charge
EOD: End-of-Discharge
EP: Eagle-Picher Industries, Joplin, Missouri
GE: General Electric Company, Gainesville, Florida
GOES: Geostationary Operational Environmental Satellite
GSFC: Goddard Space Flight Center, Greenbelt, Maryland
GU: Gulton Industries, Inc., Metuchen, New Jersey
IUE: International Ultraviolet Explorer
MANF: Manufacturer
mv: millivolts
NASA: National Aeronautics Space Administration
SMS: Synchronous Meteorological Satellite
SYNC: Synchronous Orbit
TEMP: Ambient Test Temperature
V/C: Volts per cell

RESULTS OF
CONTINUOUS SYNCHRONOUS ORBIT TESTING
ON
SEALED NICKEL-CADMIUM CELLS

I. INTRODUCTION

A. The real time synchronous orbit tests were first begun on six, 5-cell packs on 18 July 1967. Since then, an additional sixteen, 5-cell packs have been placed on tests.

B. In a synchronous orbit, the velocity of a satellite and its distance from the earth are adjusted such that one revolution of the satellite matches one rotation of the earth. Such a satellite remains fixed over one location on the earth. The earth's shadow cone changes relative to the satellite's plane of orbit. (See Figure 4) Thus every 180 days the satellite enters an eclipse season. This season lasts approximately 40 days after which the remaining 140 days are in continuous sunlight. At the beginning of an eclipse season, the satellite first moves through the outer area of the earth's shadow cone. Each day of the eclipse season it progresses through a different section of the shadow cone until it has completely traversed the cone at the end of the season. The satellite's time within the shadow cone thus varies from day to day within the eclipse season beginning with a minimum, progressing to a maximum, and returning to a minimum.

II. TEST CONDITIONS

A. The depth of discharges ranged from 40 to 80 percent and ambient test temperature ranged from -20 to 40°C. Most of the packs tested had ambient temperatures of either 0, 10 or 20°C. Ten, of the 22 packs, contained auxiliary electrode type cells. The cells were rated from 3.0 to 15.0 ampere-hours. The various charge methods used were voltage limit, auxiliary electrode, constant current or a combination of these.

B. To simulate the conditions experienced by the cells aboard a synchronous orbiting satellite, the following 182-day test regime was adopted.

1. Period simulating continuous sunlight (140 days):

a. During this period the cells may be charged at a constant current with or without a voltage limit or on an open-circuit-stand. Some packs started test with a sunlight period whereas others did not.

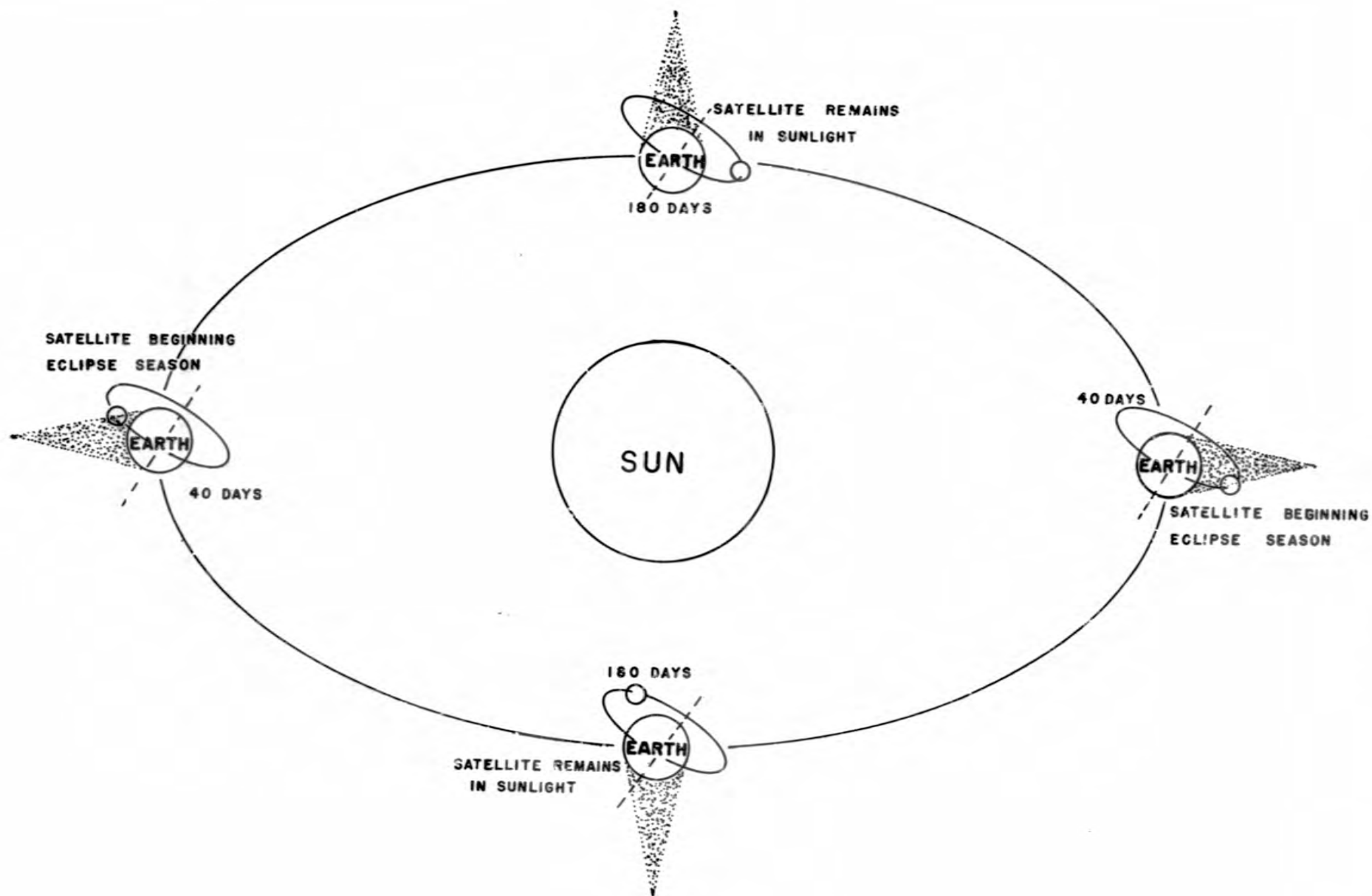


FIG. 4

2. Period simulating eclipse season (42 days):

a. All cells were discharged for 12 minutes the first day of the eclipse season. The discharge time increased by 3 to 4 minutes per day for 18 days to a maximum of 1 hour and 12 minutes. This maximum discharge then occurs once a day for 8 days (18th through 25th day of eclipse season) with one exception--a capacity check was always run during the middle of each eclipse season.

b. The capacity check was run on the 21st day of the eclipse season. The capacity check consisted of a constant current discharge (rate depending on the depth of discharge) to: an average voltage per cell, a low cell voltage, or a combination of the two in which case the first to occur was considered the limiting factor.

c. Following the capacity check, the cells continued the daily discharge of 1 hour and 12 minutes through the 25th day of the season. From the 26th day to the end of the season, the discharge was shortened by 3 to 4 minutes per day. The last day's discharge was 12 minutes, the same as the first day. The cells then returned to continuous charge (sunlight) completing the 180-day cycle.

d. Table I identifies the synchronous packs and gives the test parameters of each pack as they presently are or as they were when they were discontinued. Changes made during testing will be noted in the Test Results, Section V.

III. GENERAL DESCRIPTION

A. Cells:

a. The nickel-cadmium cells on test are of one basic type. they are rectangular with stainless steel containers and covers, both terminals are insulated from the cover by a ceramic seal and protrude through the cover as a solder-type terminals. Where auxiliary electrodes are present, the terminal is a stainless steel tab welded to the cell cover. The separator material is normally nylon (pellon). Any cells differing from this description are separately described as they are encountered in the Test Results, Section V.

B. Charge Control Methods:

a. As a continued effort to improve cells and cell life, various types of charge control methods and devices are being developed. Types of charge control used on the various synchronous packs are as follows:

(1) Constant Current (CC) -- pack is charged at a constant current.

(2) Voltage Limit (VL) -- pack is charged at a constant current to a average voltage per cell, then the current tapers while still maintaining the pack at the voltage limit.

(3) Coulometer (CLM) -- the coulometer is a device which measures the amount of electrical charge (coulombs or ampere-hours) passed through it. It accomplishes this by means of an electrochemical reaction which is directly proportional to the magnitude of the current and the time for which it is passed. Therefore, the cells are constant current charged until limited by their coulometer to a trickle charge or to open-circuit.

(4) Auxiliary Electrode (AE) -- the packs are constant current charged until a preset (trip) voltage is reached by any auxiliary electrode. The reaction of oxygen (produced on charge) with the active material of the auxiliary electrode produces a voltage in direct proportion to the oxygen pressure and, consequently the amount of charge to the auxiliary electrode. After reading the trip voltage of the auxiliary electrode, the charge current is reduced to a trickle charge or the pack may go on open-circuit.

(5) Auxiliary Electrode and Voltage Limit (AE/VL) -- packs are constant current charged with a voltage limit until an auxiliary electrode voltage reaches its trip voltage, then the current may be reduced to a trickle charge value. Also, as an example, it may be specified that the charge current begin to taper downward when the auxiliary electrode reaches 150 millivolts. It continues downward, to a minimum value, as the electrodes reach or exceed 180 millivolts. The auxiliary electrode control then is considered as having a bandwidth of 30 millivolts.

IV. EXPLANATION OF DATA PRESENTED

A. The test results are shown graphically in Figures 5 through 207. The graphs pertaining to each synchronous (Sync) pack immediately follows the discussion of that pack. Also, the information from which the graphs were plotted is included and follows that pack's graphs.

1. The first graphs for each pack show the precycling and eclipse season capacity checks. Postcycling capacity checks are also included when applicable. Precycling and postcycling capacity checks were performed at the eclipse ambient test temperature, following the same type charge as the pack receives during the eclipse season.

2. The other graphs show the performance of the pack through its eclipse seasons.

NOTE: (a) In all the computer printouts, if two characters share the same location on the page, only one will be printed. Thus if the auxiliary electrode voltage occupies the same location as the end of discharge voltage, on the same day, only one symbol is implied rather than appear as a strikeover.

(b) The packs are controlled and monitored by a computerized data acquisition system. The system "looks at" each pack every 2.4 minutes and data may be recorded at this time or at various 2.4 minute intervals depending on the test requirements. If the pack is being controlled on a auxiliary electrode or coulometer trip voltage or is being capacity checked, it may not trip out at the exact limiting voltage since the system only monitors and controls these parameters in 2.4 minute intervals.

3. Capacity check data listed under the cell designations may either be voltages or ampere-hours out, for that cell, at the end of discharge. When a value is listed in the ampere-hours (ah) out column, for that capacity check, the values for the cells are end of discharge voltages. When nothing is listed under the ah out column, then the cell values are actual ampere-hours out for that cell at the end of discharge.

4. The discussion of each pack will only pertain to significant changes or trends observed, cell failures and test parameter changes. No attempt will be made to expound on each graph since, in most cases, they are self-explanatory. The eclipse seasons will be discussed first, then the packs performance during the sunlight periods will follow.

5. Analysis (visual) comments on cells which have failed or were discontinued will be at the end of each pack's discussion. Chemical analysis data will be presented in Tables II and III of Section VI.

TABLE I

SUMMARY OF SYNCHRONOUS ORBIT PACKS

PACK NUMBER	MANF	AH	TEMP (°C)	PERCENT DEPTH OF DISCHARGE	VOLTAGE LIMIT (V/C)	DISCHARGE CURRENT (AMPS)	CHARGE CURRENT (AMPS)	SHADOW PERIODS COMPLETED	DAYS* RUN	STATUS	PROJECT
201A	GE	6.0	40	40	N/A	2.00	.20	11	1948	Discont. 11-19-72	
202A	GE	6.0	25	40	N/A	2.00	.20	17	3363	In Sun Period 18	
203A	GE	6.0	0	40	N/A	2.00	.20	17	3363	In Sun Period 18	
204A	GE	6.0	-20	40	N/A	2.00	.20	1	200	Completed 2-5-68	
204B	GE	6.0	-20	40	N/A	2.00	.20	12	2198	Discont. 8-28-74	
205A	GE	6.0	0	60	N/A	3.00	.30	17	3363	In Sun Period 18	
206A	GE	6.0	0	80	N/A	4.00	.40	17	3363	In Sun Period 18	
207A	GE	12.0	0	60	N/A	6.00	1.50	14	2742	In Sun Period 14	ATS F & G
208A	GE	12.0	0	80	N/A	8.00	3.00	14	2742	In Sun Period 14	ATS F & G
209A	GE	12.0	20	60	N/A	6.00	3.00	14	2742	In Sun Period 14	ATS F & G
210A	GE	12.0	20	80	N/A	8.00	3.00	14	2742	In Sun Period 14	ATS F & G
211A	GE	12.0	40	60	N/A	6.00	1.20	5	793	Completed 5-26-71	ATS F & G
212A	GE	12.0	-20	80	N/A	8.00	.60	11	1962	Discont. 8-28-74	ATS F & G
221A	EP	12.0	20	60	1.420	6.00	1.20	9	1931	In Sun Period 9	
222A	EP	12.0	10	60	1.457	6.00	1.20	9	1931	In Sun Period 9	
223A	EP	12.0	0	60	1.495	6.00	1.20	9	1931	In Sun Period 9	
226A	GU	15.0	20	50	1.410	6.25	1.50	8**	1266	In Sun Period 8	ATS 6
226B	GU	15.0	20	50	1.410	6.25	1.50	4	904	In Sun Period 5	ATS 6
227A	EP	3.0	20	60	N/A	1.50	.15	1	59	Discont. 2-6-74	SMS
227B	EP	3.0	20	60	N/A	1.50	.15	4	876	In Sun Period 5	SMS
227C	EP	3.0	20	60	N/A	1.50	.15	1	194	In Sun Period 1	GOES B & C
228A	GE	12.0	20	80	1.480	8.00	1.20	1	191	In Sun Period 1	IUE

*--Number of calendar days as of 1 November 1976

**--Completed 2 at GSFC

N/A--Not Applicable

V. TEST RESULTS

A. EP 3.0 ah (SMS and GOES B & C)

1. Pack 227A, 5-cells, (SMS)

a. Cell information:

(1) The cells were purchased by Philco-Ford under Contract NAS-5-71575 for NASA, GSFC. The cells were identified with the manufactures serial numbers and were from EP lot #4. The cells were fitted with pressure transducers prior to testing. Initial evaluation test results and detailed cell descriptions are contained in the NAD Crane Report QEEL/C 73-380 of 29 October 1973.

b. Parameters:

Depth of Discharge (%)	60	Discharge Current (amps)	1.5
Charge Control	CC	Temperature (°C)	20
Charge Current (amps)	.15	Float Current (amps)	.075

c. Capacity Checks: (Discharge to .75 volts any cell)

	Cell <u>1</u>	Cell <u>2</u>	Cell <u>3</u>	Cell <u>4</u>	Cell <u>5</u>	ah <u>out</u>
Precycling (Figure 5)	3.73	3.76	3.75	3.78	3.83	
Shadow 1 (Figure 6)	.593	.681	.476	.746	.645	3.76
Postcycling	3.50	3.80	3.78	4.20	4.10	

d. Test results during Eclipse Season (Figures 7 and 8).

(1) End of Discharge Voltages: The effects of the capacity check at midpoint are noticeable in that the EOD voltages of the cells increased by .015 volts the day following the capacity check.

(2) Pressure at End of Discharge and Charge: The pressure range at the beginning of the eclipse period was 30 (cell 5) to 66 PSIA (cell 1) and the range at the end was 23 (cell 5) to 58 PSIA (cell 3). The pressures decreased 8 to 12 PSIA during the discharge in the midpoint of the period, and 12 to 16 PSIA during the capacity check.

e. Performance during Sun Period: Following the shadow period, the pack was placed in its first sun period at a float current of .75 amperes. After 9 days of float the pack's control unit malfunctioned which forced discharged the cells to negative values. The pressures exceeded 300 PSIA and the cell cases were extremely distorted. The pack was discontinued following postcycling tests and was stored at NAVWPNSUPPCEN Crane.

KEY
 * HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER 15 227A
 PRECYCLING
 CYCLE NUMBER 15
 DISCHARGE RATE 1S 1.5

WQEC/C 77-134

AMPERE HOUR OUT

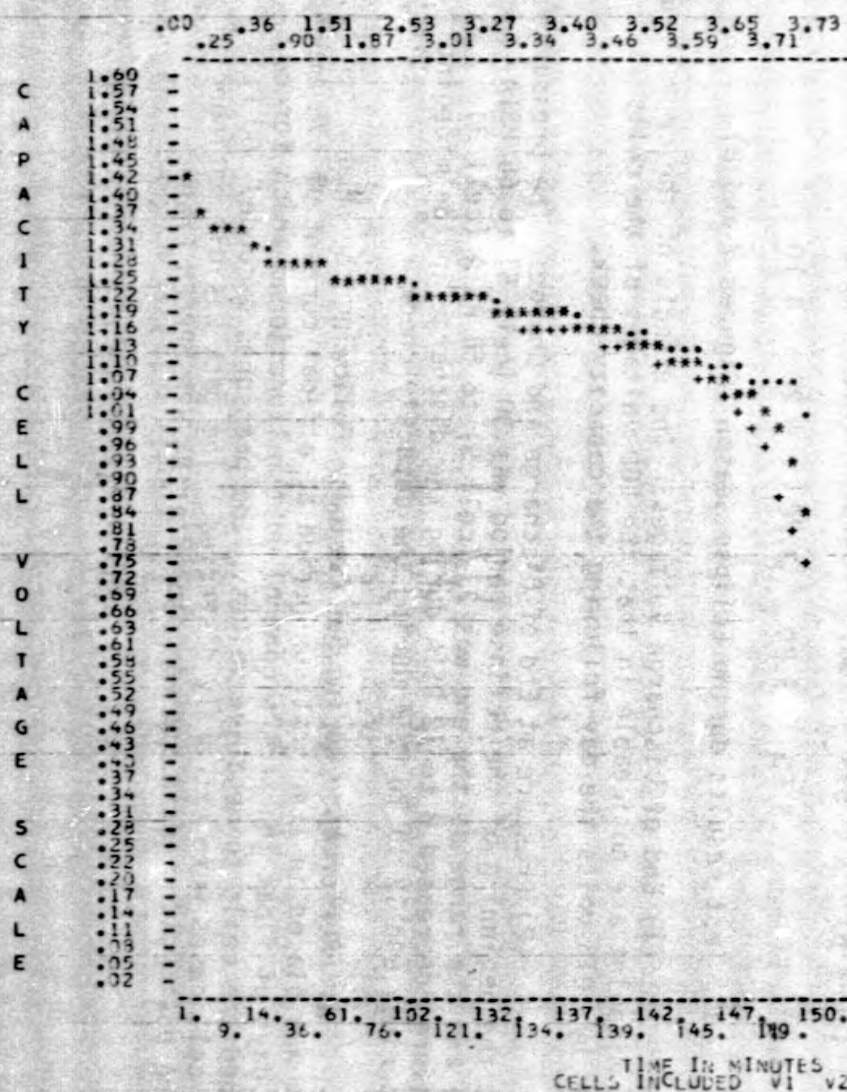


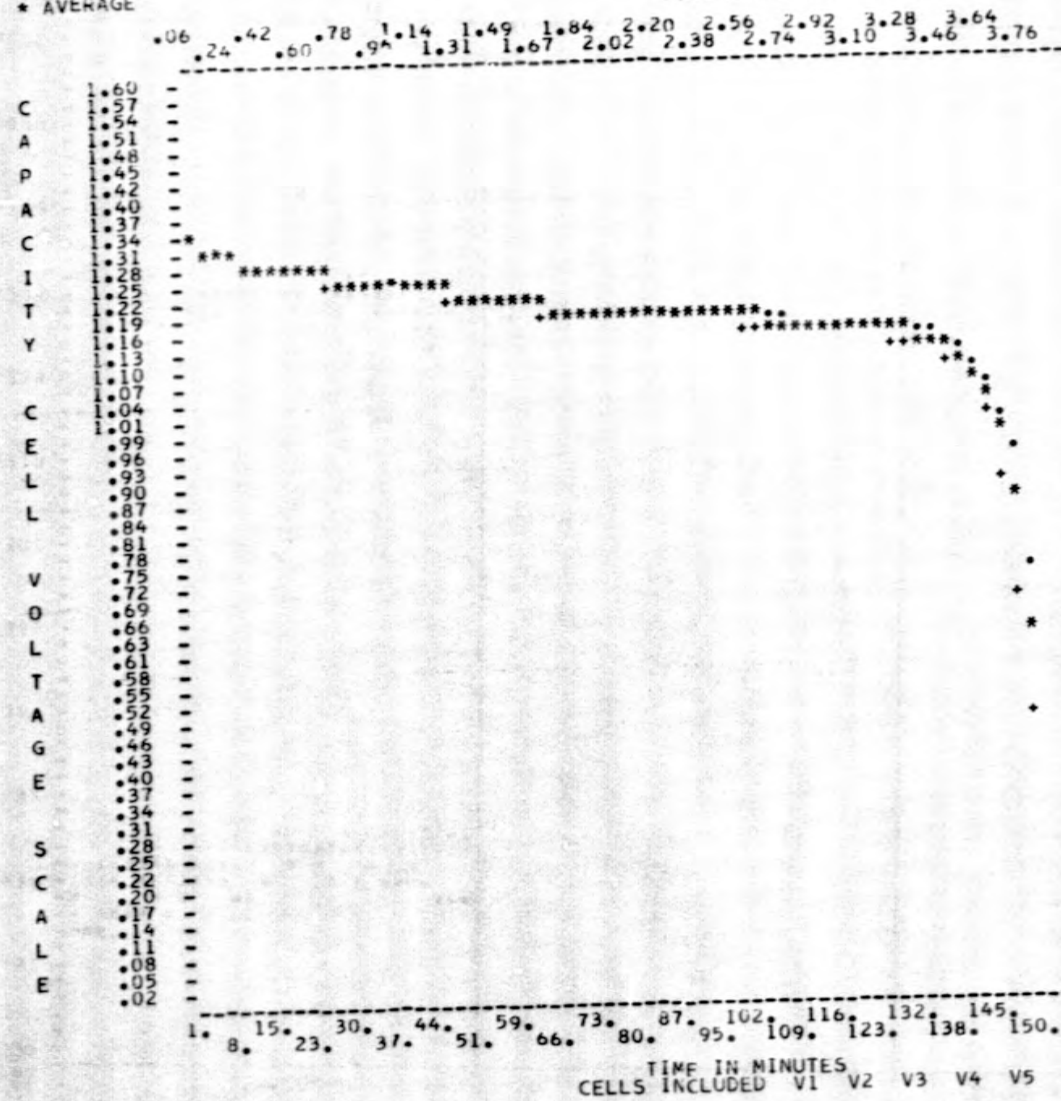
FIGURE 5

ORIGINAL PAGE IS
 OF POOR QUALITY

AMPERE HOUR OUT

KEY
• HIGH CELL
+ LOW CELL
* AVERAGE

PACK NUMBER IS 227A
SHADOW PERIOD IS 1
CYCLE NUMBER IS 28.
DISCHARGE RATE IS 1.5



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FIGURE 6

KEY
 * HIGH END DISCHARGE VOLTAGE
 + AVE END DISCHARGE VOLTAGE
 • LOW END DISCHARGE VOLTAGE
 ■ HIGH EOC
 x AVE EOC
 y LOW EOC

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60 WQEC/C 77-134
 TEMPERATURE 20
 AMPERE RATE 3
 PROJECT SMS

SERIAL 361,364,369,379,383
 EAGLE Picher CELLS

PACK = 227A

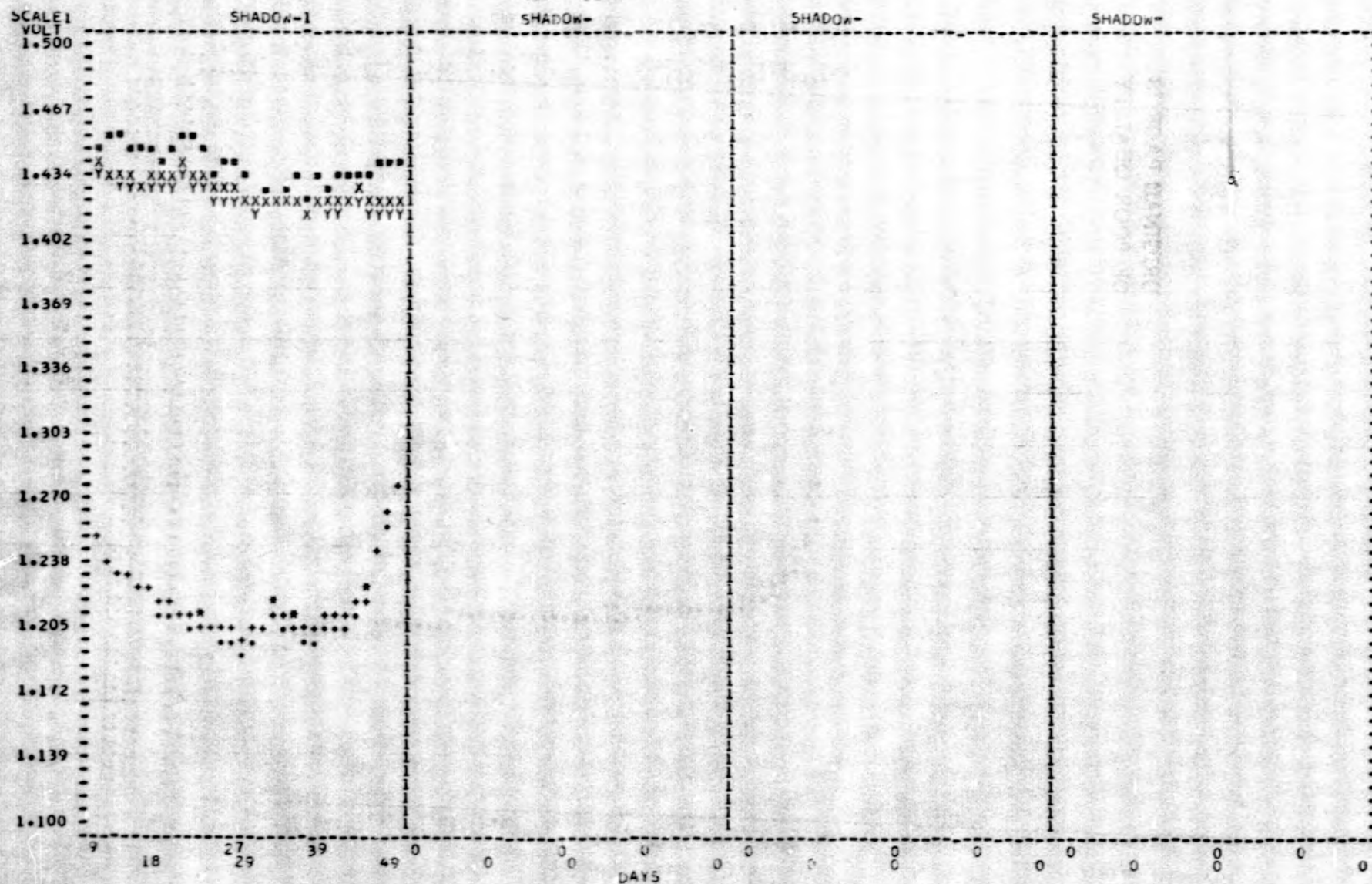


FIGURE 7

KEY
* AHD
+ AHI-TOTAL

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60
TEMPERATURE 20
AMPERE RATE 3
PROJECT SMS
SERIAL 361,364,369,379,383
EAGLE PITCHER CELLS

WQEC/C 77-134

PACK = 227A

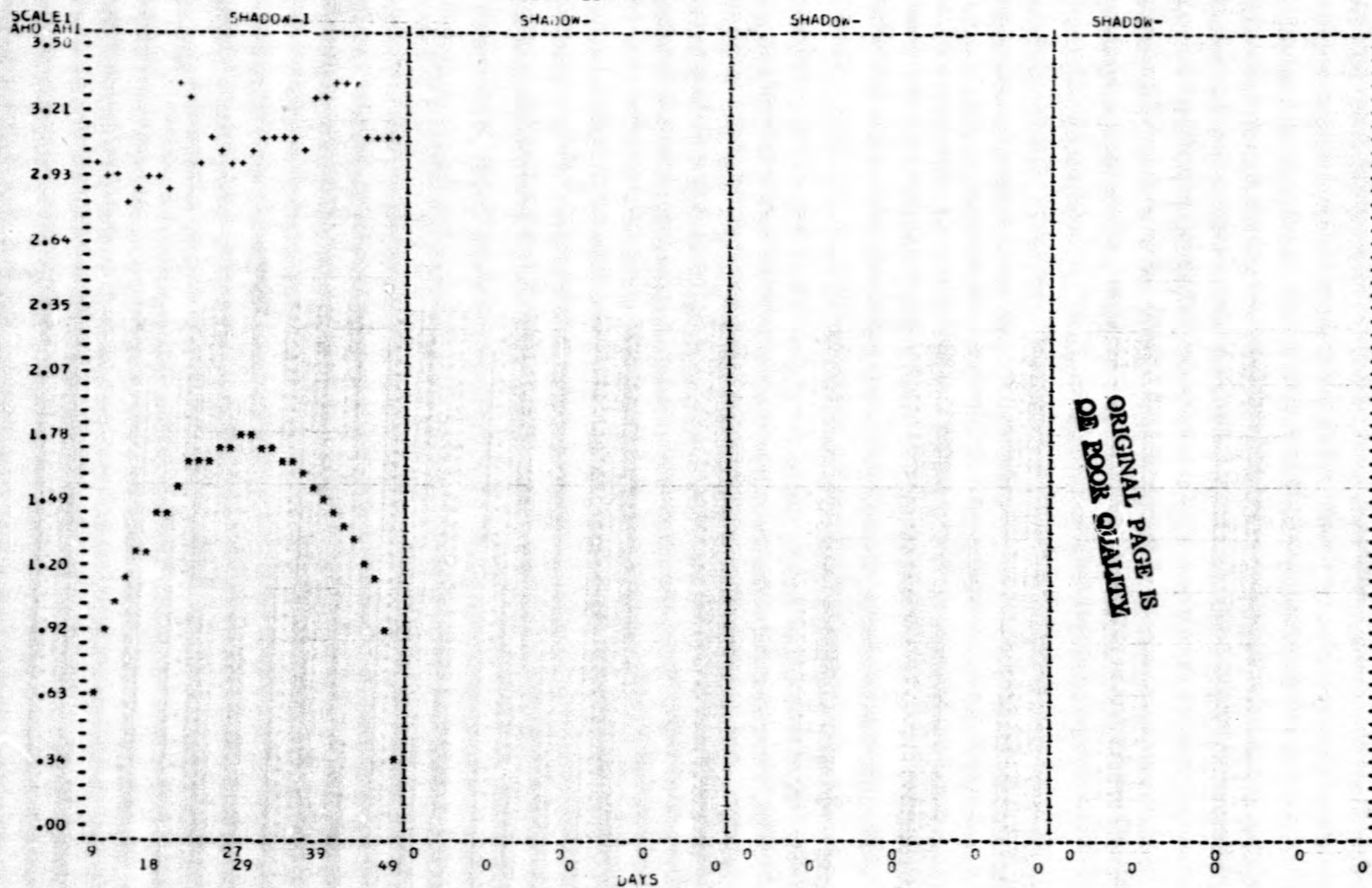


FIGURE 8

DATE OF RUN IS 10/13/76

PAGE NUMBER IS 227A

PRECYCLING IS

CYCLE IS

3.

PAGE IS

1.

TIME	AMPS	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	AVE-V	HIGH-V	LOW-V
2.7.	.000	V1	1.423	V1	1.425	V1	1.421	V1	1.425	V1	1.424	1.425	1.421
2.7.	.110	V1	1.378	V1	1.376	V1	1.374	V1	1.376	V1	1.376	1.378	1.374
2.7.	.220	V1	1.348	V1	1.346	V1	1.344	V1	1.346	V1	1.347	1.348	1.344
2.7.	.250	V1	1.344	V1	1.342	V1	1.340	V1	1.342	V1	1.343	1.344	1.340
2.7.	.270	V1	1.336	V1	1.334	V1	1.332	V1	1.334	V1	1.338	1.339	1.335
2.7.	.300	V1	1.330	V1	1.328	V1	1.326	V1	1.328	V1	1.331	1.332	1.329
2.7.	.360	V1	1.289	V1	1.287	V1	1.285	V1	1.287	V1	1.289	1.289	1.287
2.7.	.600	V1	1.289	V1	1.287	V1	1.285	V1	1.287	V1	1.289	1.289	1.287
2.7.	.640	V1	1.281	V1	1.279	V1	1.277	V1	1.279	V1	1.281	1.281	1.279
2.7.	.700	V1	1.271	V1	1.269	V1	1.267	V1	1.269	V1	1.271	1.271	1.269
2.7.	.730	V1	1.251	V1	1.249	V1	1.247	V1	1.249	V1	1.251	1.251	1.249
2.7.	.800	V1	1.244	V1	1.242	V1	1.240	V1	1.242	V1	1.244	1.244	1.240
2.7.	.810	V1	1.238	V1	1.236	V1	1.234	V1	1.236	V1	1.238	1.238	1.234
2.7.	.870	V1	1.237	V1	1.235	V1	1.233	V1	1.235	V1	1.237	1.237	1.233
2.7.	.950	V1	1.233	V1	1.231	V1	1.229	V1	1.231	V1	1.233	1.233	1.229
2.7.	.980	V1	1.224	V1	1.222	V1	1.220	V1	1.222	V1	1.224	1.224	1.220
2.7.	1.010	V1	1.224	V1	1.222	V1	1.220	V1	1.222	V1	1.224	1.224	1.220
2.7.	1.060	V1	1.224	V1	1.222	V1	1.220	V1	1.222	V1	1.224	1.224	1.220
2.7.	1.110	V1	1.219	V1	1.217	V1	1.215	V1	1.217	V1	1.219	1.219	1.215
2.7.	1.230	V1	1.203	V1	1.201	V1	1.199	V1	1.201	V1	1.203	1.203	1.199
2.7.	1.310	V1	1.185	V1	1.183	V1	1.181	V1	1.183	V1	1.185	1.185	1.181
2.7.	1.320	V1	1.182	V1	1.180	V1	1.178	V1	1.180	V1	1.182	1.182	1.178
2.7.	1.330	V1	1.177	V1	1.175	V1	1.173	V1	1.175	V1	1.177	1.177	1.173
2.7.	1.340	V1	1.170	V1	1.168	V1	1.166	V1	1.168	V1	1.170	1.170	1.166
2.7.	1.350	V1	1.164	V1	1.162	V1	1.160	V1	1.162	V1	1.164	1.164	1.160
2.7.	1.360	V1	1.157	V1	1.155	V1	1.153	V1	1.155	V1	1.157	1.157	1.153
2.7.	1.380	V1	1.144	V1	1.142	V1	1.140	V1	1.142	V1	1.144	1.144	1.140
2.7.	1.400	V1	1.134	V1	1.132	V1	1.130	V1	1.132	V1	1.134	1.134	1.130
2.7.	1.420	V1	1.127	V1	1.125	V1	1.123	V1	1.125	V1	1.127	1.127	1.123
2.7.	1.440	V1	1.119	V1	1.117	V1	1.115	V1	1.117	V1	1.119	1.119	1.115
2.7.	1.460	V1	1.110	V1	1.108	V1	1.106	V1	1.108	V1	1.110	1.110	1.106
2.7.	1.470	V1	1.104	V1	1.102	V1	1.100	V1	1.102	V1	1.104	1.104	1.100
2.7.	1.480	V1	1.095	V1	1.093	V1	1.091	V1	1.093	V1	1.095	1.095	1.091
2.7.	1.490	V1	1.087	V1	1.085	V1	1.083	V1	1.085	V1	1.087	1.087	1.083
2.7.	1.500	V1	1.072	V1	1.070	V1	1.068	V1	1.070	V1	1.072	1.072	1.068
2.7.	1.510	V1	1.060	V1	1.058	V1	1.056	V1	1.058	V1	1.060	1.060	1.056
2.7.	1.520	V1	1.046	V1	1.044	V1	1.042	V1	1.044	V1	1.046	1.046	1.042
2.7.	1.530	V1	1.020	V1	1.018	V1	1.016	V1	1.018	V1	1.020	1.020	1.016
2.7.	1.540	V1	1.011	V1	1.009	V1	1.007	V1	1.009	V1	1.011	1.011	1.007
2.7.	1.550	V1	1.008	V1	1.006	V1	1.004	V1	1.006	V1	1.008	1.008	1.004
2.7.	1.560	V1	1.009	V1	1.007	V1	1.005	V1	1.007	V1	1.009	1.009	1.005
2.7.	1.570	V1	1.001	V1	1.000	V1	1.000	V1	1.001	V1	1.001	1.001	1.000
2.7.	1.580	V1	1.000	V1	1.000	V1	1.000	V1	1.000	V1	1.000	1.000	1.000
2.7.	1.590	V1	1.000	V1	1.000	V1	1.000	V1	1.000	V1	1.000	1.000	1.000
2.7.	1.600	V1	1.000	V1	1.000	V1	1.000	V1	1.000	V1	1.000	1.000	1.000
2.7.	1.610	V1	1.000	V1	1.000	V1	1.000	V1	1.000	V1	1.000	1.000	1.000
2.7.	1.620	V1	1.000	V1	1.000	V1	1.000	V1	1.000	V1	1.000	1.000	1.000
2.7.	1.630	V1	1.000	V1	1.000	V1	1.000	V1	1.000	V1	1.000	1.000	1.000
2.7.	1.640	V1	1.000	V1	1.000	V1	1.000	V1	1.000	V1	1.000	1.000	1.000
2.7.	1.650	V1	1.000	V1	1.000	V1	1.000	V1	1.000	V1	1.000	1.000	1.000
2.7.	1.660	V1	1.000	V1	1.000	V1	1.000	V1	1.000	V1	1.000	1.000	1.000
2.7.	1.670	V1	1.000	V1	1.000	V1	1.000	V1	1.000	V1	1.000	1.000	1.000
2.7.	1.680	V1	1.000	V1	1.000	V1	1.000	V1	1.000	V1	1.000	1.000	1.000
2.7.	1.690	V1	1.000	V1	1.000	V1	1.000	V1	1.000	V1	1.000	1.000	1.000
2.7.	1.700	V1	1.000	V1	1.000	V1	1.000	V1	1.000	V1	1.000	1.000	1.000
2.7.	1.710	V1	1.000	V1	1.000	V1	1.000	V1	1.000	V1	1.000	1.000	1.000
2.7.	1.720	V1	1.000	V1	1.000	V1	1.000	V1	1.000	V1	1.000	1.000	1.000
2.7.	1.730	V1	1.000	V1	1.000	V1	1.000	V1	1.000	V1	1.000	1.000	1.000

DATE OF RUN IS 08/27/76

PACK NUMBER IS 227A

SHADOW PERIOD IS 1

CYCLE IS

28.

TIME	AMPS	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	AVE-V	HIGH-V	LOW-V		
2040	.060	V1	1.327	V2	1.328	V3	1.326	V4	1.326	.000	1.327	1.328	1.326
2041	.120	V1	1.313	V2	1.314	V3	1.312	V4	1.313	.000	1.313	1.314	1.312
2042	.180	V1	1.302	V2	1.303	V3	1.302	V4	1.303	.000	1.302	1.303	1.302
2043	.240	V1	1.294	V2	1.295	V3	1.294	V4	1.295	.000	1.295	1.296	1.294
2044	.300	V1	1.288	V2	1.289	V3	1.288	V4	1.289	.000	1.288	1.289	1.288
2045	.360	V1	1.283	V2	1.284	V3	1.283	V4	1.284	.000	1.283	1.284	1.282
2046	.420	V1	1.279	V2	1.280	V3	1.278	V4	1.279	.000	1.279	1.280	1.278
2047	.480	V1	1.275	V2	1.276	V3	1.274	V4	1.275	.000	1.275	1.276	1.274
2048	.540	V1	1.271	V2	1.272	V3	1.270	V4	1.271	.000	1.271	1.272	1.270
2049	.600	V1	1.268	V2	1.269	V3	1.267	V4	1.269	.000	1.268	1.269	1.267
2050	.660	V1	1.265	V2	1.266	V3	1.263	V4	1.266	.000	1.265	1.266	1.263
2051	.720	V1	1.262	V2	1.263	V3	1.260	V4	1.262	.000	1.261	1.262	1.260
2052	.780	V1	1.258	V2	1.259	V3	1.256	V4	1.259	.000	1.258	1.259	1.256
2053	.840	V1	1.255	V2	1.256	V3	1.253	V4	1.256	.000	1.255	1.256	1.253
2054	.900	V1	1.252	V2	1.253	V3	1.250	V4	1.252	.000	1.252	1.253	1.250
2055	.960	V1	1.248	V2	1.249	V3	1.246	V4	1.249	.000	1.248	1.249	1.246
2056	.020	V1	1.245	V2	1.246	V3	1.243	V4	1.246	.000	1.245	1.246	1.243
2057	.080	V1	1.242	V2	1.243	V3	1.239	V4	1.242	.000	1.241	1.243	1.239
2058	.140	V1	1.238	V2	1.239	V3	1.236	V4	1.239	.000	1.238	1.239	1.236
2059	.190	V1	1.234	V2	1.235	V3	1.232	V4	1.235	.000	1.234	1.235	1.232
2060	.250	V1	1.230	V2	1.231	V3	1.228	V4	1.231	.000	1.230	1.231	1.228
2061	.310	V1	1.226	V2	1.227	V3	1.224	V4	1.227	.000	1.226	1.227	1.224
2062	.370	V1	1.222	V2	1.223	V3	1.220	V4	1.223	.000	1.222	1.223	1.220
2063	.430	V1	1.218	V2	1.219	V3	1.215	V4	1.219	.000	1.218	1.219	1.215
2064	.490	V1	1.214	V2	1.215	V3	1.211	V4	1.215	.000	1.214	1.215	1.211
2065	.550	V1	1.211	V2	1.211	V3	1.207	V4	1.211	.000	1.210	1.211	1.207
2066	.610	V1	1.207	V2	1.208	V3	1.203	V4	1.208	.000	1.206	1.208	1.203
2067	.670	V1	1.203	V2	1.204	V3	1.199	V4	1.204	.000	1.202	1.204	1.199
2068	.730	V1	1.199	V2	1.200	V3	1.196	V4	1.201	.000	1.199	1.201	1.196
2069	.790	V1	1.195	V2	1.196	V3	1.193	V4	1.199	.000	1.197	1.199	1.193
2070	.840	V1	1.192	V2	1.193	V3	1.188	V4	1.196	.000	1.194	1.196	1.191
2071	.900	V1	1.188	V2	1.189	V3	1.185	V4	1.193	.000	1.193	1.195	1.190
2072	.960	V1	1.185	V2	1.186	V3	1.181	V4	1.193	.000	1.191	1.193	1.188
2073	.020	V1	1.181	V2	1.182	V3	1.177	V4	1.192	.000	1.190	1.192	1.187
2074	.080	V1	1.177	V2	1.178	V3	1.173	V4	1.191	.000	1.189	1.191	1.185
2075	.140	V1	1.173	V2	1.174	V3	1.168	V4	1.190	.000	1.188	1.190	1.185
2076	.200	V1	1.169	V2	1.170	V3	1.164	V4	1.188	.000	1.186	1.188	1.182
2077	.260	V1	1.165	V2	1.166	V3	1.161	V4	1.187	.000	1.185	1.187	1.181
2078	.320	V1	1.161	V2	1.162	V3	1.157	V4	1.185	.000	1.183	1.185	1.179
2079	.380	V1	1.157	V2	1.158	V3	1.153	V4	1.184	.000	1.182	1.184	1.177
2080	.440	V1	1.153	V2	1.154	V3	1.149	V4	1.182	.000	1.180	1.182	1.176
2081	.500	V1	1.149	V2	1.150	V3	1.145	V4	1.181	.000	1.179	1.181	1.174
2082	.560	V1	1.145	V2	1.146	V3	1.141	V4	1.179	.000	1.177	1.179	1.172
2083	.620	V1	1.141	V2	1.142	V3	1.137	V4	1.177	.000	1.175	1.177	1.170
2084	.680	V1	1.137	V2	1.138	V3	1.133	V4	1.176	.000	1.173	1.176	1.168
2085	.740	V1	1.133	V2	1.134	V3	1.129	V4	1.174	.000	1.171	1.174	1.166
2086	.800	V1	1.129	V2	1.130	V3	1.125	V4	1.172	.000	1.169	1.172	1.164
2087	.860	V1	1.125	V2	1.126	V3	1.121	V4	1.170	.000	1.167	1.170	1.162
2088	.920	V1	1.121	V2	1.122	V3	1.117	V4	1.168	.000	1.165	1.168	1.159
2089	.980	V1	1.117	V2	1.118	V3	1.113	V4	1.166	.000	1.163	1.166	1.156
2090	.040	V1	1.113	V2	1.114	V3	1.109	V4	1.164	.000	1.160	1.164	1.153
2091	.100	V1	1.109	V2	1.110	V3	1.105	V4	1.162	.000	1.158	1.162	1.150
2092	.160	V1	1.105	V2	1.106	V3	1.101	V4	1.159	.000	1.154	1.159	1.146

ORIGINAL PAGE IS
OF POOR QUALITY

DATE OF RUN IS 08/27/76

PACK NUMBER IS 227A

SHADOW PERIOD IS 1

CYCLE IS

28.

TIME	AMPS	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	AVE-V	HIGH-V	LOW-V
2247.	3.220	V1	1.154	V2	1.155	V3	1.149	V4	1.141	V5	1.156	1.151	1.141
2250.	3.280	V1	1.140	V2	1.151	V3	1.144	V4	1.134	V5	1.153	1.146	1.134
2252.	3.340	V1	1.134	V2	1.147	V3	1.136	V4	1.125	V5	1.149	1.140	1.125
2254.	3.400	V1	1.123	V2	1.139	V3	1.123	V4	1.112	V5	1.143	1.131	1.112
2257.	3.460	V1	1.109	V2	1.127	V3	1.105	V4	1.093	V5	1.132	1.114	1.093
2259.	3.520	V1	1.094	V2	1.101	V3	1.059	V4	1.070	V5	1.109	1.086	1.059
2302.	3.580	V1	1.054	V2	1.067	V3	1.013	V4	1.045	V5	1.066	1.049	1.013
2304.	3.640	V1	1.004	V2	1.026	V3	1.014	V4	1.014	V5	1.010	1.000	1.000
2306.	3.700	V1	1.004	V2	1.026	V3	1.014	V4	1.014	V5	1.010	1.000	1.000
2309.	3.760	V1	1.004	V2	1.026	V3	1.014	V4	1.014	V5	1.010	1.000	1.000

DATE OF RUN	IS 10/20/76	AVE-DIS	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AHO	AHI
227A	9.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	11.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	12.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	13.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	15.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	16.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	18.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	20.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	22.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	24.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	26.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	28.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	30.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	31.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	33.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	34.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	36.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	37.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	39.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	40.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	41.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	43.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	44.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	46.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	48.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
227A	49.	1.22	1.22	1.22	1.22	1.22	1.22	1.22
1	0.00656	1.50000	1.50000	1.19500	150.40000	1.435	1.603	1.000
2	0.05738	3.50000	1.40000	1.36000	38.40000	1.432	1.602	1.000

WQEC/C 77-134

shd = 1 - ok

ORIGINAL PAGE IS
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2. Pack 227B, 5-cells (SMS)

a. Cell information:

(1) The cells were manufactured under NASA prime contract NAS-5-21575, to Philco-Fords' specification number SP-212064C. These cells were identified with the manufacturers serial numbers and were from EP lot #6. The cells were previously tested at GSFC for 165 cycles (60 or 100% DOD, and a temperature range of 0 to 35°C) as per TP 761.2-73-03. Other cells from this cell lot are in Philco-Ford Battery S/N's 1005 and 1006. The cells were fitted with pressure transducers prior to testing.

b. Parameters:

Depth of Discharge (%)	60	Discharge Current (amps)	1.5
Charge Control	CC	Temperature (°C)	20
Charge Current (amps)	1.5	Float Current (amps)	.075

c. Capacity Checks: (Discharge to .75 volts any cell)

	Cell <u>1</u>	Cell <u>2</u>	Cell <u>3</u>	Cell <u>4</u>	Cell <u>5</u>	ah <u>out</u>
Preshadow (Figure 9)*	1.050	.848	.982	1.162	.961	3.98
Shadow 1	.679	.414	.605	.441	.581	4.20
Shadow 2 (Figure 10)	.767	.590	.789	.474	.632	4.06
Shadow 3 (Figure 11)	.852	.684	.819	.573	.441	3.65
Shadow 4 (Figure 12)	1.068	.924	1.018	1.168	.445	2.18

*Preshadow--capacity check (5.0 volts/pack) followed 14 life cycles at 25°C and 60% DOD.

d. Test results during Eclipse Seasons: (Figures 13 and 14)

(1) End of Discharge Voltages: There has been a decline in the EOD voltages, following shadow 2, due to cell 5. The high EOD voltages, before the capacity check, have declined from 1.215 volts (shadow 1) to 1.183 volts (shadow 4). The reconditioning effect, on the high EOD voltages, following the capacity check, have also declined from 1.249 volts to 1.202 volts for shadows 1 and 4 respectively.

(2) End of Charge Voltages: The average EOC voltages have decreased from 1.423 volts, during shadow 1 (middle of period) to 1.404 during shadows 3 and 4.

(3) Pressures at end of Discharge and Charge: There has been no change in the cyclic pressure trend throughout the eclipse seasons. The end of charge pressures, for the 5 cells, ranged from 0 to 15 PSIA and the end of discharge pressures ranged from 1 to 2 PSIA less than those at the end of charge.

e. Performance during sun period: This pack has completed 5 periods, in which it had an abbreviated initial period (2 months), prior to the start of its first shadow period. Following is a listing of the high, average, and low cell voltages at the start and end of each sun period. The pressure range, for the five cells, was 0-15 PSIA during these periods.

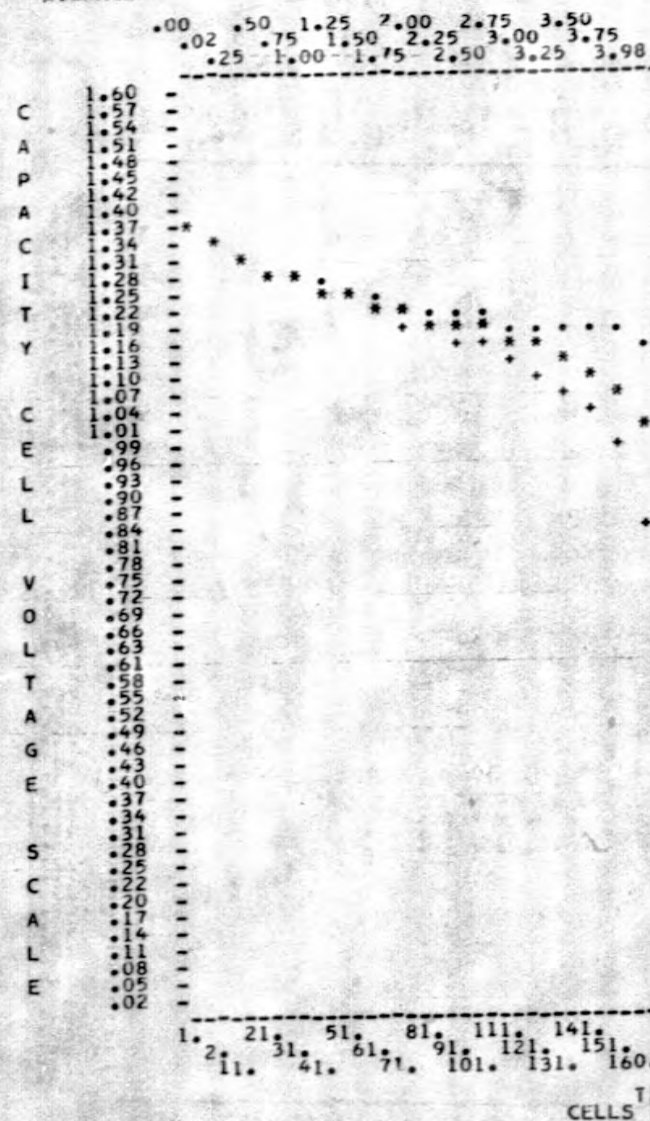
Sun Periods											
<u>Voltages**</u>	1		2		3		4		5		
	<u>Start</u>	<u>End</u>	<u>Start</u>	<u>End</u>	<u>Start</u>	<u>End</u>	<u>Start</u>	<u>End</u>	<u>Start</u>	<u>End</u>	
High	1.438(1)	1.416(2)	1.400(1,5)	1.389(2)	1.396(1,3)	1.372(2)	1.298(1,4)	1.388(1)	1.395(1)	1.395(2)	
Average	1.431	1.403	1.397	1.367	1.394	1.354	1.391	1.378	1.361	1.391	
Low	1.409(4)	1.368(4)	1.392(4)	1.329(4)	1.392(4,5)	1.311(4)	1.384(5)	1.365(4)	1.321(2)	1.386(4)	

** -- () indicates which cell

KEY
 * HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 227B
 PRE-SHADOW
 CYCLE NUMBER IS 18.
 DISCHARGE RATE IS 1.5

AMPERE HOUR OUT



ORIGINAL PAGE IS
 OF POOR QUALITY

FIGURE 9

KEY
 * HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER 15 227B
 SHADOW PERIOD 15 2
 CYCLE NUMBER 15 296.
 DISCHARGE RATE 15 1.5

AMPERE HOUR OUT

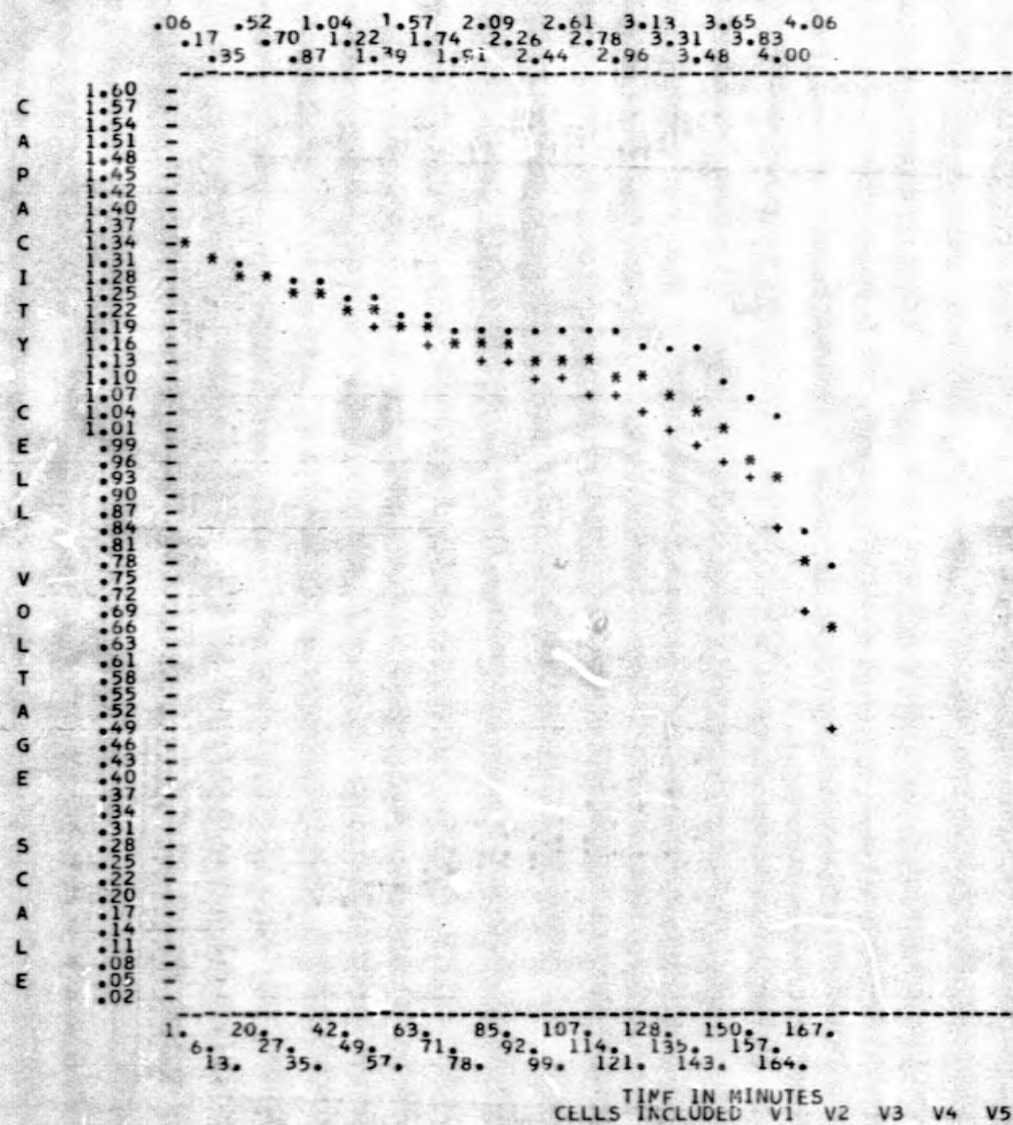


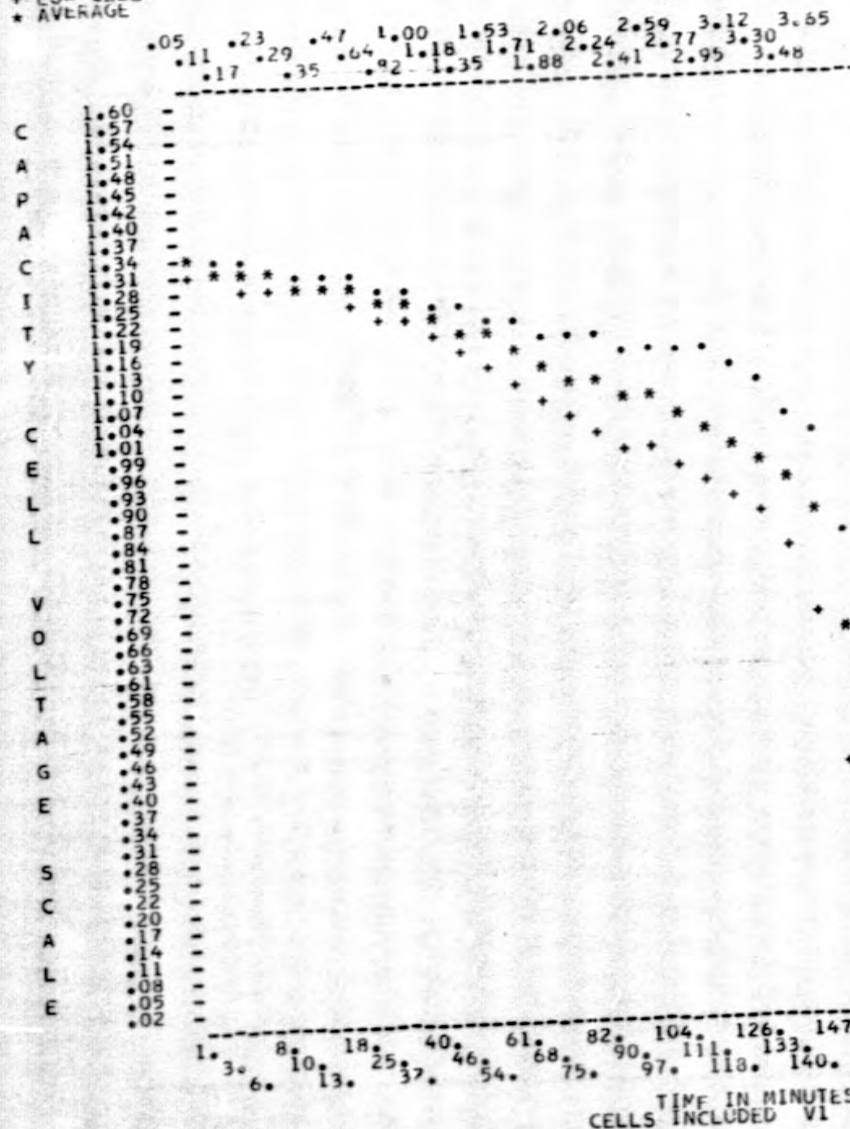
FIGURE 10

WQEC/C 77-134

AMPERE HOUR OUT

KEY
* HIGH CELL
* LOW CELL
* AVERAGE

PACK NUMBER IS 2278
SHADOW PERIOD IS 3
CYCLE NUMBER IS 577.
DISCHARGE RATE IS 1.5



ORIGINAL PAGE IS
OF POOR QUALITY

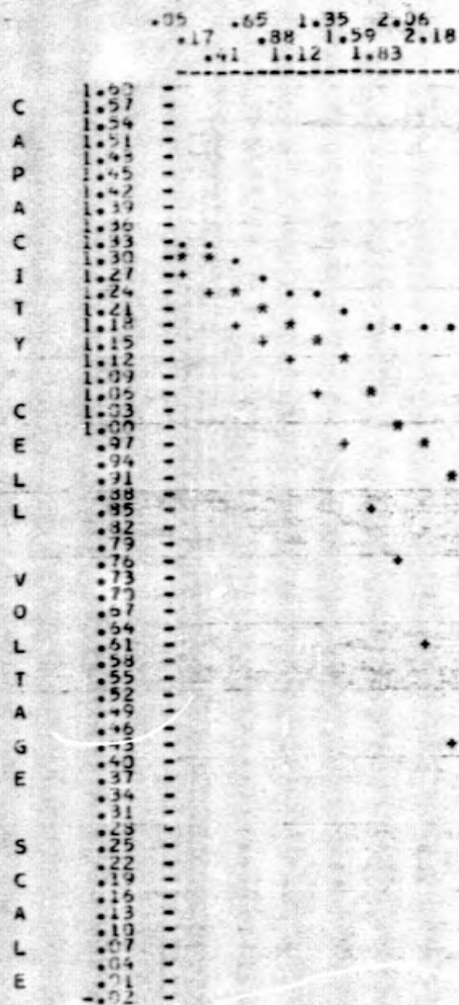
FIGURE 11

KEY
 • HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 227B
 SHADOW PERIOD IS 4
 CYCLE NUMBER IS 768.
 DISCHARGE RATE IS 1.5

WQEC/C 77-134

AMPERE HOUR OUT



TIME IN MINUTES
 CELLS INCLUDED V1 V2 V3 V4 V5

FIGURE 12

KEY
 * HIGH END DISCHARGE VOLTAGE
 + AVE END DISCHARGE VOLTAGE
 • LOW END DISCHARGE VOLTAGE
 X HIGH EOC
 X AVE EOC
 Y LOW EOC

SYNCHRONOUS ORBIT SHADOW PLOT

WQEC/C 77-134
 DEPTH DISCHARGE 60
 TEMPERATURE 20
 AMPERE RATE 03
 EAGLE PICHEE CELLS

SERIAL 485, 487, 492, 521, 523
 PROJECT SMS

PACK = 2275

SCALE1
 VOLT
 1.450

SHADOW-1

SHADOW-2

SHADOW-3

SHADOW-4

1.380

1.311

1.241

1.171

1.102

1.032

.962

.893

.823

.753

.684

.600

80 88 98 101 112 121 276 286 295 298 308 319 557 566 576 578 587 598 748 757 766 767 779 789

DAYS

ORIGINAL PAGE IS
 OF POOR QUALITY

FIGURE 13

KEY
 * AHD
 + AHI-TOTAL

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60 WQEC/C 77-134
 TEMPERATURE 20
 AMPERE RATE 03
 EAGLE PITCHER CELLS
 SERIAL 485, 487, 492, 521, 523
 PROJECT SMS

PACK = 227B

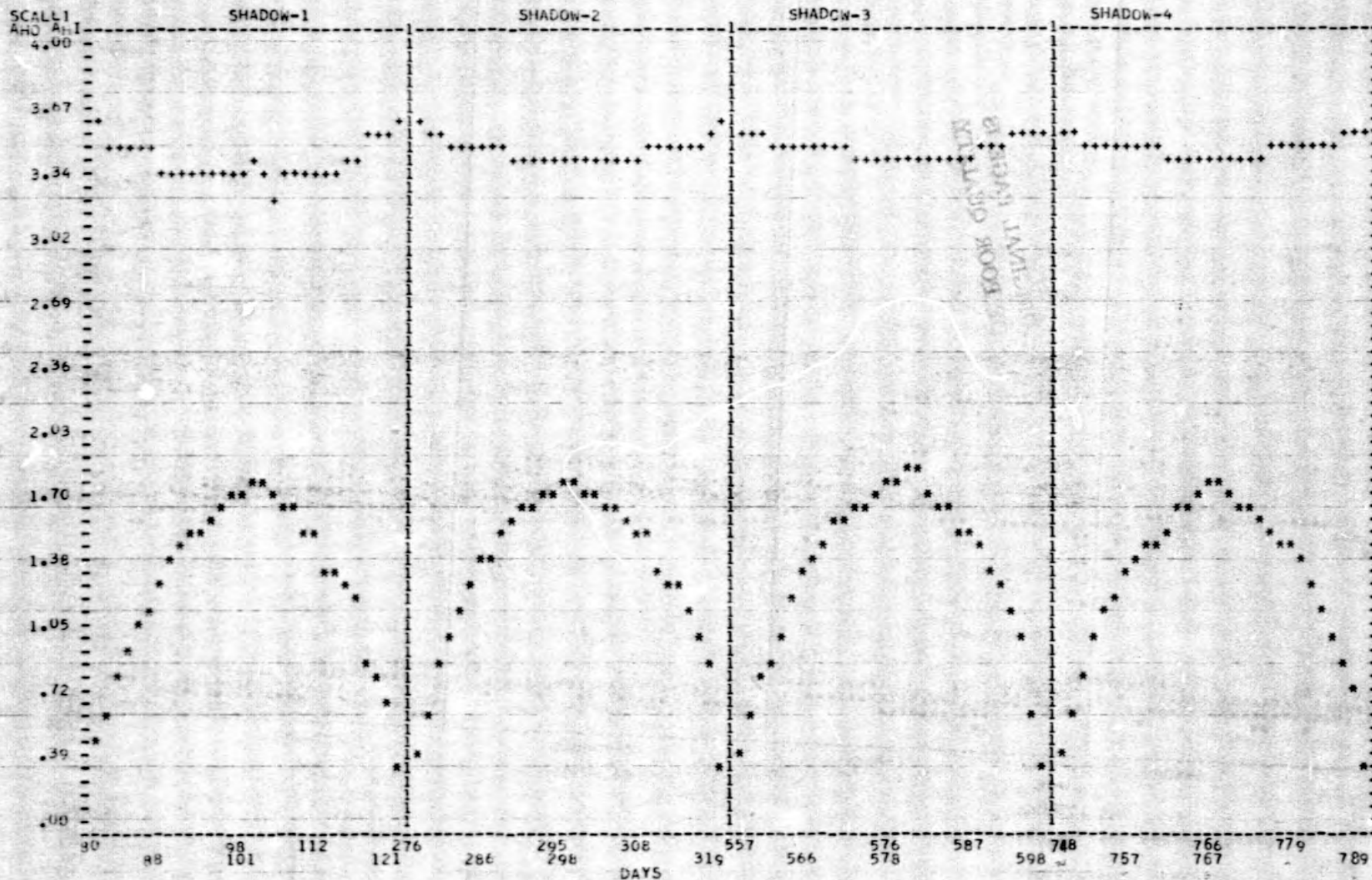


FIGURE 14

DATE OF RUN IS 09/10/76

PACK NUMBER IS 227B

Preshadow

IS 1

CYCLE IS

18.

TIME	AMPS	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	AVE-V	HIGH-V	LOW-V
1.	.000	V1	.367	V3	.367	V4	.357	V5	.367	1.365	1.368	1.357
10.	.025	V1	.337	V3	.337	V4	.337	V5	.338	1.338	1.342	1.335
20.	.250	V1	.300	V3	.300	V4	.300	V5	.300	1.300	1.306	1.300
30.	.500	V1	.278	V3	.278	V4	.278	V5	.283	1.283	1.287	1.278
40.	.750	V1	.265	V3	.265	V4	.265	V5	.271	1.271	1.276	1.265
50.	.000	V1	.251	V3	.251	V4	.251	V5	.258	1.258	1.265	1.251
60.	.250	V1	.236	V3	.236	V4	.236	V5	.245	1.245	1.254	1.236
70.	.500	V1	.220	V3	.220	V4	.220	V5	.232	1.232	1.243	1.221
80.	.750	V1	.204	V3	.204	V4	.204	V5	.214	1.214	1.230	1.200
90.	.000	V1	.188	V3	.188	V4	.188	V5	.200	1.200	1.220	1.183
00.	.250	V1	.171	V3	.171	V4	.171	V5	.194	1.194	1.214	1.170
10.	.500	V1	.155	V3	.155	V4	.155	V5	.177	1.177	1.208	1.151
20.	.750	V1	.137	V3	.137	V4	.137	V5	.166	1.166	1.204	1.134
30.	.000	V1	.119	V3	.119	V4	.119	V5	.152	1.152	1.199	1.111
40.	.250	V1	.099	V3	.099	V4	.099	V5	.136	1.136	1.194	1.084
50.	.500	V1	.078	V3	.078	V4	.078	V5	.113	1.113	1.188	1.038
60.	.750	V1	.055	V3	.055	V4	.055	V5	.087	1.087	1.180	.972
70.	.000	V1	.033	V3	.033	V4	.033	V5	.061	1.061	1.162	.848
80.	.250	V1	.000	V3	.000	V4	.000	V5	.000	.000	.000	.000
90.	.500	V1	.000	V3	.000	V4	.000	V5	.000	.000	.000	.000
00.	.750	V1	.000	V3	.000	V4	.000	V5	.000	.000	.000	.000
10.	.980	V1	.000	V3	.000	V4	.000	V5	.000	.000	.000	.000

ORIGINAL PAGE IS
OF POOR QUALITY

DATE OF RUN IS 09/10/76

PACK NUMBER IS 227B

SHADOW PERIOD IS 2

CYCLE IS

296.

TIME	AMPS	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	AVE-V	HIGH-V	LOW-V
1405.	.058	V1	1.333	V2	1.329	V3	1.332	V4	1.337	V5	1.328	1.331
1410.	.174	V1	1.307	V2	1.304	V3	1.309	V4	1.320	V5	1.304	1.309
1417.	.348	V1	1.282	V2	1.282	V3	1.287	V4	1.301	V5	1.282	1.301
1424.	.522	V1	1.277	V2	1.266	V3	1.272	V4	1.288	V5	1.272	1.288
1431.	.696	V1	1.257	V2	1.252	V3	1.258	V4	1.276	V5	1.259	1.276
1439.	.870	V1	1.244	V2	1.237	V3	1.244	V4	1.264	V5	1.245	1.264
1446.	1.044	V1	1.222	V2	1.222	V3	1.230	V4	1.250	V5	1.230	1.250
1453.	1.218	V1	1.214	V2	1.206	V3	1.214	V4	1.237	V5	1.215	1.237
1500.	1.392	V1	1.198	V2	1.189	V3	1.198	V4	1.223	V5	1.185	1.223
1507.	1.566	V1	1.188	V2	1.172	V3	1.182	V4	1.210	V5	1.166	1.210
1515.	1.740	V1	1.166	V2	1.157	V3	1.168	V4	1.199	V5	1.149	1.199
1522.	1.914	V1	1.153	V2	1.146	V3	1.151	V4	1.192	V5	1.136	1.192
1529.	2.088	V1	1.139	V2	1.137	V3	1.138	V4	1.188	V5	1.125	1.188
1536.	2.262	V1	1.124	V2	1.122	V3	1.122	V4	1.185	V5	1.113	1.185
1543.	2.436	V1	1.110	V2	1.101	V3	1.113	V4	1.182	V5	1.100	1.182
1551.	2.610	V1	1.100	V2	1.101	V3	1.105	V4	1.179	V5	1.085	1.179
1558.	2.784	V1	1.110	V2	1.082	V3	1.105	V4	1.176	V5	1.085	1.176
1605.	2.958	V1	1.098	V2	1.082	V3	1.085	V4	1.172	V5	1.089	1.172
1612.	3.132	V1	1.066	V2	1.029	V3	1.060	V4	1.166	V5	1.067	1.166
1619.	3.306	V1	1.034	V2	1.029	V3	1.039	V4	1.154	V5	1.041	1.154
1627.	3.480	V1	1.000	V2	1.000	V3	1.007	V4	1.149	V5	1.041	1.149
1634.	3.654	V1	1.000	V2	1.000	V3	1.007	V4	1.149	V5	1.041	1.149
1641.	3.828	V1	1.000	V2	1.000	V3	1.007	V4	1.149	V5	1.041	1.149
1648.	4.002	V1	1.000	V2	1.000	V3	1.007	V4	1.149	V5	1.041	1.149
1651.	4.060	V1	1.000	V2	1.000	V3	1.007	V4	1.149	V5	1.041	1.149

HIGH-V LOW-V

[illegible]

ORIGINAL PAGE IS
OF POOR QUALITY

DATE OF RUN IS 09/14/76

PACK NUMBER IS 2270

SHADOW PERIOD IS 4

CYCLE IS

718.

WQEC/C 77-134

PAGE IS

5.

TIME	AMPS	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	AVE-V	HIGH-V	LOW-V
844.	.050	V1	1.324	V2	1.312	V3	1.318	V4	1.337	V5	1.274	.000	.000
854.	.170	V1	1.298	V2	1.283	V3	1.292	V4	1.318	V5	1.243	.000	.000
864.	.413	V1	1.266	V2	1.245	V3	1.258	V4	1.291	V5	1.195	.000	.000
873.	.650	V1	1.241	V2	1.211	V3	1.228	V4	1.270	V5	1.155	.000	.000
883.	.840	V1	1.218	V2	1.176	V3	1.202	V4	1.252	V5	1.120	.000	.000
892.	1.120	V1	1.195	V2	1.141	V3	1.173	V4	1.233	V5	1.071	.000	.000
902.	1.350	V1	1.168	V2	1.090	V3	1.139	V4	1.214	V5	.985	.000	.000
912.	1.590	V1	1.116	V2	1.009	V3	1.100	V4	1.190	V5	.840	.000	.000
921.	1.830	V1	1.106	V2	.969	V3	1.062	V4	1.180	V5	.756	.000	.000
931.	2.060	V1	1.082	V2	.939	V3	1.035	V4	1.172	V5	.601	.000	.000
941.	2.180	V1	1.068	V2	.924	V3	1.018	V4	1.165	V5	.445	.000	.000

29

DATE	OF RUN	15 08/27/76	AVE-DIS	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AHO	AHI
PACK	DAY	HIGH-DIS							
2270	319.	1.292	1.282	1.277	1.381	1.378	1.372	354	580
2270	357.	1.217	1.206	1.187	1.385	1.380	1.375	390	550
2270	558.	1.249	1.214	1.204	1.391	1.381	1.365	590	540
2270	559.	1.235	1.199	1.187	1.400	1.387	1.367	760	520
2270	560.	1.233	1.192	1.175	1.404	1.396	1.363	880	500
2270	561.	1.216	1.184	1.170	1.402	1.396	1.386	1000	480
2270	563.	1.208	1.175	1.155	1.404	1.398	1.390	1180	480
2270	565.	1.201	1.167	1.143	1.409	1.403	1.393	1290	470
2270	566.	1.198	1.164	1.140	1.403	1.399	1.395	1350	470
2270	567.	1.195	1.159	1.131	1.403	1.398	1.388	1410	470
2270	570.	1.184	1.140	1.099	1.412	1.404	1.392	1590	460
2270	571.	1.172	1.103	1.039	1.420	1.409	1.398	1600	450
2270	572.	1.200	1.142	1.090	1.420	1.411	1.402	1650	430
2270	573.	1.200	1.141	1.088	1.428	1.419	1.406	1700	430
2270	575.	1.200	1.141	1.088	1.420	1.414	1.406	1770	420
2270	576.	1.193	1.125	1.063	1.419	1.411	1.403	1770	420
2270	578.	1.210	1.127	1.053	1.428	1.414	1.403	1810	420
2270	579.	1.220	1.149	1.089	1.428	1.414	1.403	1810	420
2270	580.	1.213	1.150	1.092	1.414	1.408	1.400	1810	420
2270	582.	1.206	1.161	1.095	1.425	1.413	1.405	1700	430
2270	583.	1.205	1.141	1.082	1.436	1.418	1.412	1650	440
2270	585.	1.199	1.120	1.057	1.416	1.408	1.403	1620	430
2270	586.	1.211	1.142	1.085	1.414	1.408	1.404	1530	430
2270	587.	1.212	1.146	1.088	1.409	1.401	1.396	1480	430
2270	588.	1.214	1.151	1.094	1.402	1.396	1.391	1410	430
2270	590.	1.210	1.135	1.070	1.398	1.393	1.387	1290	460
2270	591.	1.209	1.136	1.072	1.401	1.393	1.388	1230	480
2270	593.	1.223	1.158	1.102	1.388	1.355	1.351	1120	510
2270	594.	1.211	1.150	1.095	1.397	1.389	1.377	1000	520
2270	597.	1.266	1.232	1.170	1.403	1.392	1.383	590	540
2270	598.	1.239	1.257	1.224	1.402	1.385	1.361	320	550
2270	599.	1.239	1.218	1.190	1.391	1.387	1.378	399	550
2270	600.	1.239	1.206	1.176	1.385	1.377	1.372	588	520
2270	700.	1.239	1.178	1.100	1.400	1.375	1.356	767	480
2270	702.	1.239	1.146	1.022	1.402	1.384	1.358	1003	473
2270	703.	1.239	1.133	1.022	1.429	1.403	1.378	121	460
2270	704.	1.239	1.138	1.022	1.404	1.391	1.376	180	444
2270	706.	1.239	1.122	1.022	1.408	1.396	1.374	300	450
2270	707.	1.239	1.115	1.022	1.412	1.396	1.382	359	450
2270	708.	1.239	1.104	1.022	1.415	1.403	1.395	416	450
2270	709.	1.239	1.094	1.022	1.414	1.403	1.395	475	438
2270	711.	1.239	1.086	1.022	1.414	1.403	1.395	540	430
2270	713.	1.239	1.110	1.022	1.415	1.403	1.395	630	440
2270	714.	1.239	1.071	1.022	1.415	1.404	1.399	652	435
2270	716.	1.239	1.048	1.022	1.414	1.402	1.398	711	428
2270	717.	1.239	1.031	1.022	1.412	1.403	1.399	771	420
2270	720.	1.239	1.097	1.022	1.417	1.405	1.390	774	420
2270	721.	1.239	1.018	1.022	1.416	1.404	1.392	711	420
2270	723.	1.239	1.029	1.022	1.414	1.401	1.390	653	420
2270	724.	1.239	1.020	1.022	1.413	1.403	1.392	648	420
2270	725.	1.239	1.031	1.022	1.415	1.400	1.386	593	420
2270	727.	1.239	1.042	1.022	1.418	1.404	1.387	534	450
2270	728.	1.239	1.056	1.022	1.414	1.404	1.391	475	450
2270	729.	1.239	1.077	1.022	1.413	1.399	1.379	416	460
2270	730.	1.239	1.068	1.022	1.413	1.400	1.388	357	462
2270	732.	1.239	1.082	1.022	1.410	1.400	1.388	239	474
2270	734.	1.239	1.108	1.022	1.410	1.398	1.382	120	480
2270	735.	1.239	1.141	1.022	1.411	1.393	1.377	1000	500
2270	736.	1.242	1.148	1.068	1.411	1.395	1.372	880	520

WQEC/C 77-134

DATE	PACK	ROW	DIS	AVE-DIS	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AHD	AHI
2276	739	18 08 27 76	1.261	1.179	1.109	1.417	1.382	1.317	.690	3.540
2273	739		1.288	1.225	1.124	1.402	1.370	1.329	.350	3.567
			1.45000	63.00000		149.80000				
			4.00000	-1.80000		40.80000				
			.01393							
			.05557							

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3. Pack 227C, 5-cells (GOES B & C)

a. Cell information:

(1) The cells were manufactured to Aeronutronic-Ford's "Nickel-Cadmium Battery Cell (3.0 ampere-hour) Procurement Specification", No. SP-212064C Amendment 1, Addendum SE-237904A. These cells were from EP lots #10 and #12. Cells from these lots are intended for use in GOES B & C batteries (S/N 1013, 1014, 1015, 1016 and 1017), manufactured by Aeronutronic-Ford Corporation. The cells were tested at Aeronutronic-Ford in accordance with "Battery Cell Screening Procedure", SC-2137281B, Addendum SC-237903, Amendment 1. The purpose of this test is to verify the performance and life of these cell lots and to provide cell characteristic data which will assist in establishing procedures for operation of the batteries in orbit.

b. Parameters:

Depth of Discharge (%)	60	Discharge Current (amps)	1.5
Charge Control	CC	Temperature (°C)	20
Charge Current (amps)	.15	Float Current (amps)	.085

c. Capacity Checks: (Discharge till any cell reaches .75 volts)

	Cell <u>1</u>	Cell <u>2</u>	Cell <u>3</u>	Cell <u>4</u>	Cell <u>5</u>	ah <u>out</u>
Precycling* (Figure 15)	1.012	.996	.923	.871	.875	4.23
Shadow 1 (Figure 16)	.420					4.17

* -- Discharge to 5.0 volts pack voltage

Cells scheduled for capacity checks:	<u>Shadow</u>	<u>Cells</u>
	1	1
	2	1,2
	3	1
	4	1,2,3
	5	repeat sequence

d. Test results during the Eclipse Season (Figures 17 and 18)

(1) End of Discharge Voltages: The end of discharge voltage, of cell 1, increased on the second cycle after its capacity test which shows the effect of the capacity discharge. The discharge values decreased on the cycle following the capacity check since the test sequence did not allow cell 1 to become fully charged (3.18 ah_{in}) and the other cells were on open circuit for 24 hours while cell 1 was being capacity checked.

e. Performance during Sun Period: Pack began test with an eclipse season and has completed one sun period. Following is a listing of the high, average, and low cell voltages at the start and end of this period.

	Sun Period	
<u>Voltages**</u>	<u>Start</u>	<u>End</u>
High	1.397(4)	1.404(1)
Average	1.394	1.401
Low	1.390(1)	1.396(4)

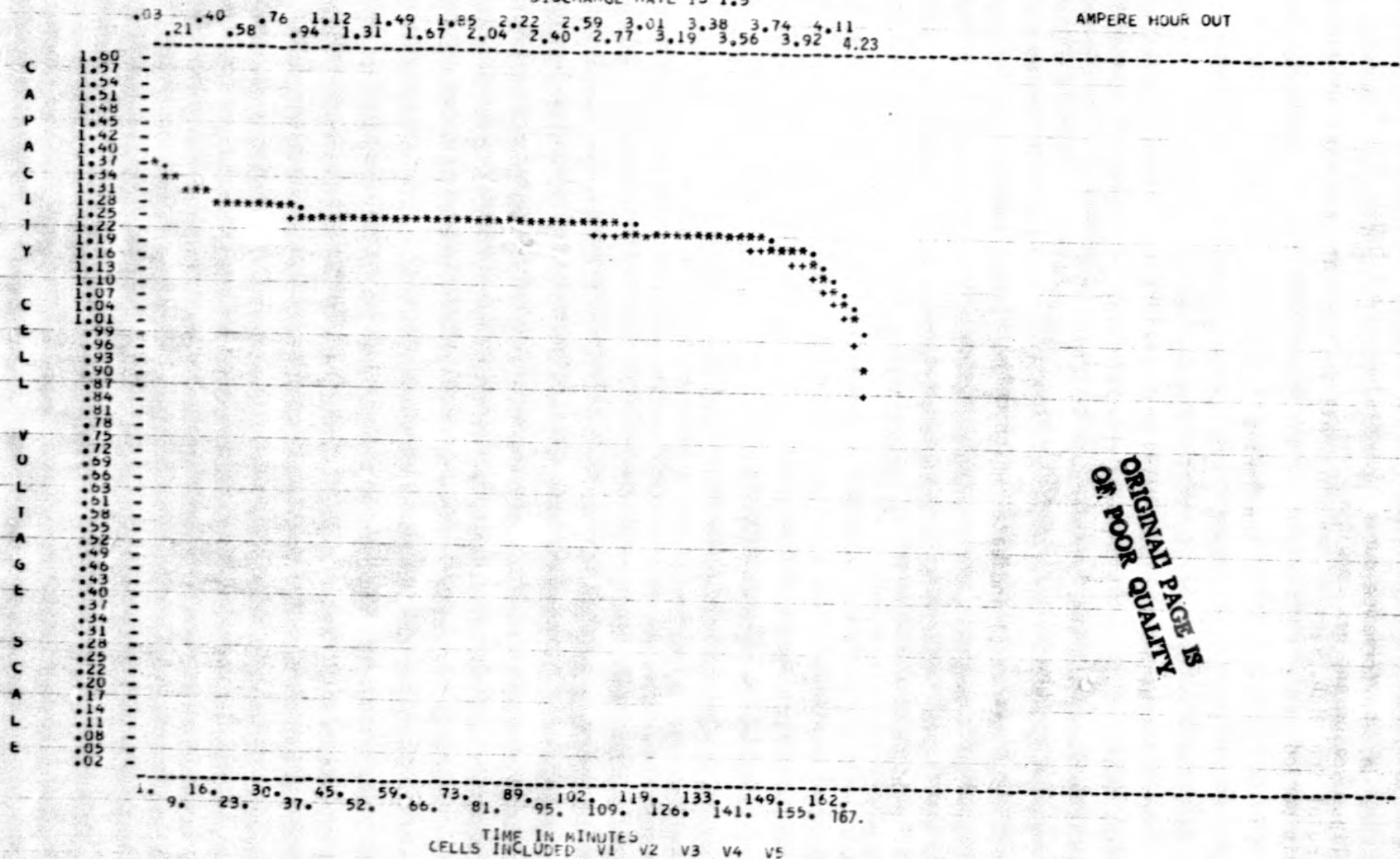
** -- () indicates which cell.

KEY
 • HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER 15 227C
 PRE-CYCLING
 CYCLE NUMBER 15
 DISCHARGE RATE IS 1.5

WQEC/C 77-134

AMPERE HOUR OUT



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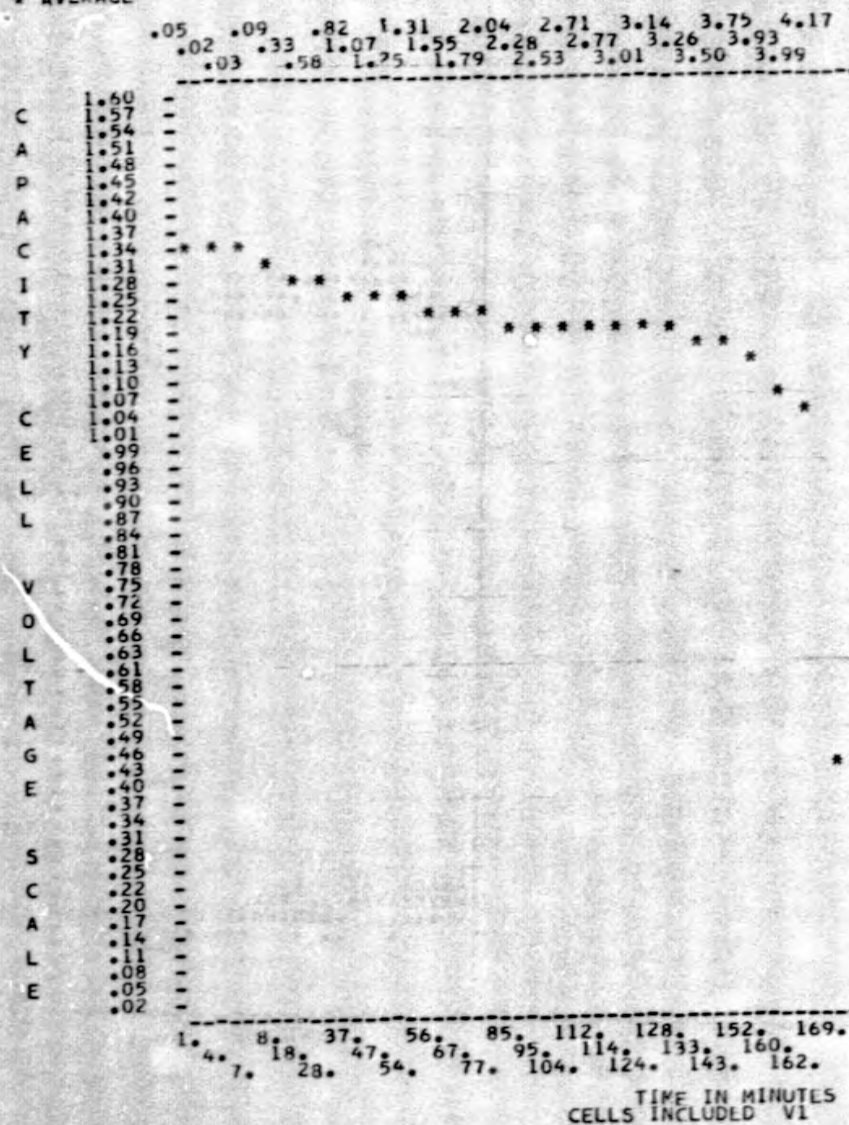
FIGURE 15

KEY
 * HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 227C
 SHADOW PERIOD IS 1
 CYCLE NUMBER IS 36
 DISCHARGE RATE IS 1.5

WQEC/C 77-134

AMPERE HOUR OUT



ORIGINAL PAGE IS
 OF POOR QUALITY

FIGURE 16

WQEC/C 77-134

KEY
 * HIGH END DISCHARGE VOLTAGE
 + AVE END DISCHARGE VOLTAGE
 • LOW END DISCHARGE VOLTAGE
 * HIGH EOC
 X AVE EOC
 Y LOW EOC

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60
 TEMPERATURE 20
 APPERE RATE 03
 EAGLE PITCHER CELLS

SERIAL 775,971,800,987,836

GCES B AND C

PACK = 227C

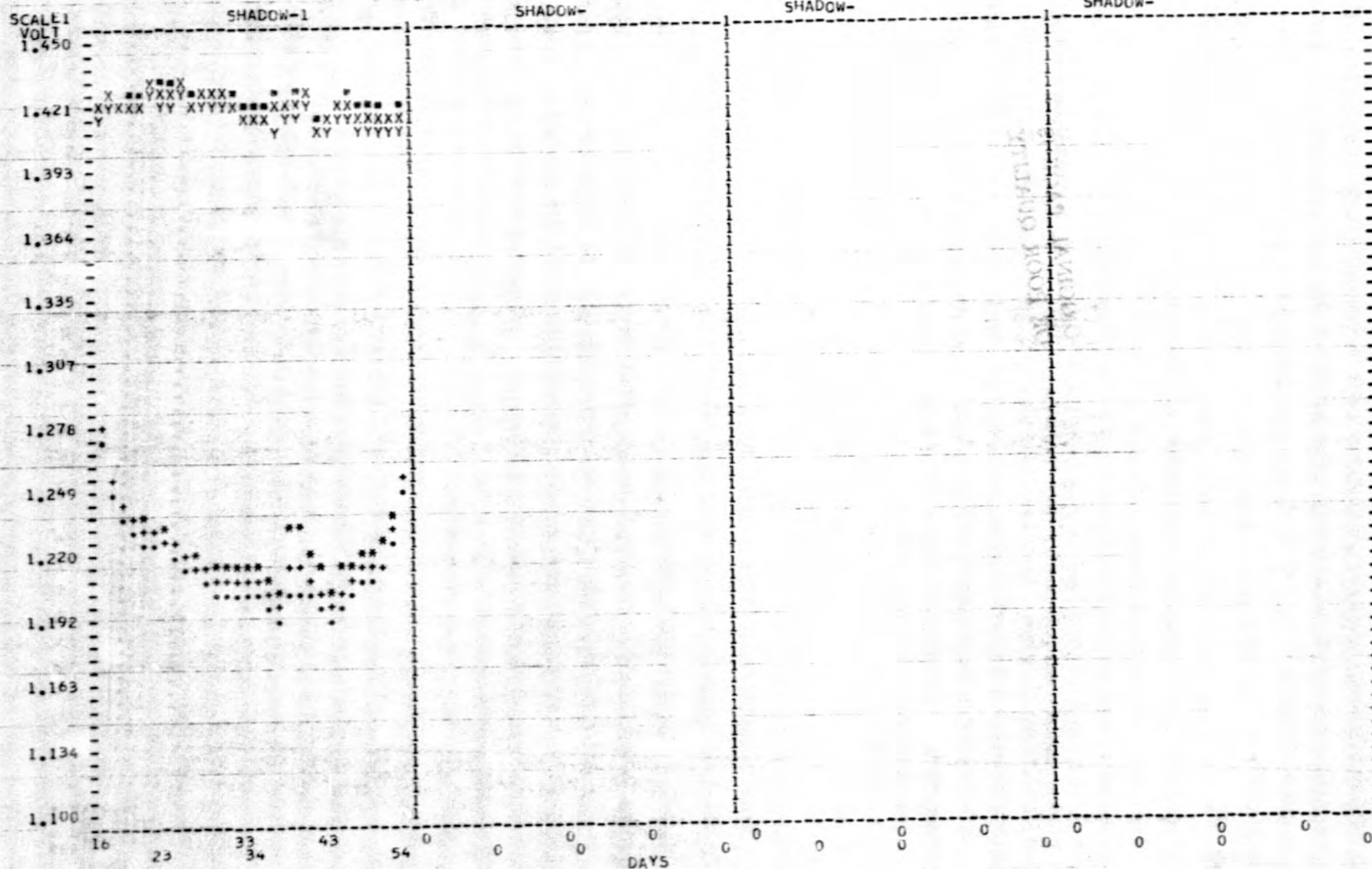


FIGURE 17

WQEC/C 77-134

KEY
* AHO
• AHI-TOTAL

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60
TEMPERATURE 20
AMPERE RATE 03
EAGLE PITCHER CELLS
SERIAL 775,971,800,987,836
GCES B AND C

PACK = 227C

SCALE 1
AHO AHI

SHADOW-1

SHADOW-

SHADOW-

SHADOW-

4.00

3.67

3.34

3.02

2.69

2.36

2.03

1.70

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DAYS

ORIGINAL PAGE IS
OF POOR QUALITY

FIGURE 18

DATE OF RUN IS 10/13/76

PACK NUMBER IS 227C

PRECYCLING 15

CYCLE IS

3.

1.

TIME	APPS	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	AVE-V	HIGH-V	LOW-V
1233.	231	V	V	V	V	V	V	V	V	1.374	1.375	1.372
1236.	232	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1238.	233	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1241.	234	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1243.	235	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1245.	236	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1248.	237	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1250.	238	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1253.	239	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1255.	240	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1257.	241	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1259.	242	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1300.	243	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1302.	244	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1305.	245	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1307.	246	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1309.	247	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1311.	248	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1312.	249	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1314.	250	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1317.	251	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1319.	252	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1321.	253	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1324.	254	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1326.	255	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1329.	256	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1331.	257	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1333.	258	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1336.	259	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1338.	260	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1341.	261	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1343.	262	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1345.	263	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1348.	264	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1350.	265	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1353.	266	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1355.	267	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1357.	268	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1400.	269	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1402.	270	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1405.	271	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1407.	272	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1412.	273	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1414.	274	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1417.	275	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1419.	276	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1421.	277	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1424.	278	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1433.	279	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1436.	280	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1438.	281	V	V	V	V	V	V	V	V	1.375	1.375	1.372
1441.	282	V	V	V	V	V	V	V	V	1.375	1.375	1.372

DATE OF RUN IS 10/13/76

PACK NUMBER IS 227C

PRECYCLING IS

CYCLE IS

3.

WQEC/C 77-134
PAGE IS

2.

TIME	AMPS	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	AVE-V	HIGH-V	LOW-V
1443.	3.315	V1	.....	.....	.....	.....	.....	.....	.....	.....	1.220	1.227	1.215
1445.	3.375	V1	.....	.....	.....	.....	.....	.....	.....	.....	1.218	1.222	1.210
1448.	3.437	V1	.....	.....	.....	.....	.....	.....	.....	.....	1.219	1.217	1.206
1450.	3.498	V1	.....	.....	.....	.....	.....	.....	.....	.....	1.219	1.215	1.201
1453.	3.559	V1	.....	.....	.....	.....	.....	.....	.....	.....	1.209	1.212	1.196
1455.	3.620	V1	.....	.....	.....	.....	.....	.....	.....	.....	1.201	1.209	1.181
1457.	3.681	V1	.....	.....	.....	.....	.....	.....	.....	.....	1.195	1.205	1.177
1500.	3.742	V1	.....	.....	.....	.....	.....	.....	.....	.....	1.186	1.199	1.164
1502.	3.803	V1	.....	.....	.....	.....	.....	.....	.....	.....	1.176	1.192	1.147
1505.	3.864	V1	.....	.....	.....	.....	.....	.....	.....	.....	1.159	1.178	1.125
1507.	3.925	V1	.....	.....	.....	.....	.....	.....	.....	.....	1.138	1.161	1.097
1509.	3.986	V1	.....	.....	.....	.....	.....	.....	.....	.....	1.111	1.145	1.069
1512.	4.047	V1	.....	.....	.....	.....	.....	.....	.....	.....	1.079	1.105	1.037
1514.	4.108	V1	.....	.....	.....	.....	.....	.....	.....	.....	1.032	1.070	0.981
1517.	4.169	V1	.....	.....	.....	.....	.....	.....	.....	.....	0.936	1.012	0.891
1519.	4.230	V1	.....	.....	.....	.....	.....	.....	.....	.....	0.874	0.956	0.841

ORIGINAL PAGE IS
OF POOR QUALITY

DATE OF RUN IS 09/10/76

PACK NUMBER IS 227C

SHADOW PERIOD IS 1

CYCLE IS

36.

TIME	AMPS	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	AVE-V	HIGH-V	LOW-V
1045.	.047	V1	1.333	.000	.000	.000	.000	.000	.000	1.333	1.333	1.333
1048.	.016	V1	1.333	.000	.000	.000	.000	.000	.000	1.333	1.333	1.333
1050.	.031	V1	1.326	.000	.000	.000	.000	.000	.000	1.326	1.326	1.326
1052.	.092	V1	1.313	.000	.000	.000	.000	.000	.000	1.313	1.313	1.313
1102.	.334	V1	1.286	.000	.000	.000	.000	.000	.000	1.286	1.286	1.286
1112.	.578	V1	1.273	.000	.000	.000	.000	.000	.000	1.273	1.273	1.273
1121.	.822	V1	1.261	.000	.000	.000	.000	.000	.000	1.261	1.261	1.261
1131.	.066	V1	1.247	.000	.000	.000	.000	.000	.000	1.247	1.247	1.247
1138.	.249	V1	1.237	.000	.000	.000	.000	.000	.000	1.237	1.237	1.237
1140.	.310	V1	1.233	.000	.000	.000	.000	.000	.000	1.233	1.233	1.233
1150.	.552	V1	1.217	.000	.000	.000	.000	.000	.000	1.217	1.217	1.217
1200.	.795	V1	1.206	.000	.000	.000	.000	.000	.000	1.206	1.206	1.206
1209.	.039	V1	1.200	.000	.000	.000	.000	.000	.000	1.200	1.200	1.200
1219.	.282	V1	1.197	.000	.000	.000	.000	.000	.000	1.197	1.197	1.197
1228.	.526	V1	1.193	.000	.000	.000	.000	.000	.000	1.193	1.193	1.193
1236.	.709	V1	1.189	.000	.000	.000	.000	.000	.000	1.189	1.189	1.189
1238.	.770	V1	1.188	.000	.000	.000	.000	.000	.000	1.188	1.188	1.188
1248.	.014	V1	1.182	.000	.000	.000	.000	.000	.000	1.182	1.182	1.182
1252.	.136	V1	1.178	.000	.000	.000	.000	.000	.000	1.178	1.178	1.178
1257.	.238	V1	1.175	.000	.000	.000	.000	.000	.000	1.175	1.175	1.175
1307.	.502	V1	1.165	.000	.000	.000	.000	.000	.000	1.165	1.165	1.165
1316.	.746	V1	1.144	.000	.000	.000	.000	.000	.000	1.144	1.144	1.144
1324.	.930	V1	1.084	.000	.000	.000	.000	.000	.000	1.084	1.084	1.084
1326.	.990	V1	1.052	.000	.000	.000	.000	.000	.000	1.052	1.052	1.052
1333.	.173	V1	.420	.000	.000	.000	.000	.000	.000	.420	.420	.420

DATE	OF	RUN	IS	04/27/76	AVE-DIS	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AHO	AHI
227C	1	1	1	1	1.275	1.272	1.424	1.420	1.418	.366	.360
227C	2	2	2	2	1.253	1.251	1.427	1.425	1.423	.600	.540
227C	3	3	3	3	1.244	1.240	1.424	1.421	1.419	.781	.500
227C	4	4	4	4	1.237	1.233	1.425	1.421	1.419	.024	.460
227C	5	5	5	5	1.232	1.229	1.425	1.421	1.420	.141	.440
227C	6	6	6	6	1.230	1.227	1.435	1.430	1.428	.201	.420
227C	7	7	7	7	1.228	1.225	1.430	1.426	1.424	.263	.400
227C	8	8	8	8	1.226	1.220	1.431	1.427	1.424	.383	.420
227C	9	9	9	9	1.222	1.217	1.434	1.430	1.427	.445	.400
227C	10	10	10	10	1.217	1.214	1.427	1.424	1.421	.504	.380
227C	11	11	11	11	1.212	1.208	1.428	1.424	1.421	.550	.400
227C	12	12	12	12	1.210	1.205	1.429	1.424	1.421	.622	.430
227C	13	13	13	13	1.210	1.205	1.428	1.424	1.421	.689	.430
227C	14	14	14	14	1.210	1.204	1.421	1.417	1.414	.687	.450
227C	15	15	15	15	1.209	1.204	1.421	1.417	1.414	.753	.450
227C	16	16	16	16	1.208	1.199	1.420	1.417	1.414	.747	.450
227C	17	17	17	17	1.206	1.198	1.420	1.417	1.414	.807	.460
227C	18	18	18	18	1.206	1.198	1.420	1.417	1.414	.673	.460
227C	19	19	19	19	1.206	1.198	1.420	1.417	1.414	.830	.460
227C	20	20	20	20	1.206	1.198	1.420	1.417	1.414	.761	.460
227C	21	21	21	21	1.206	1.198	1.420	1.417	1.414	.703	.460
227C	22	22	22	22	1.206	1.198	1.420	1.417	1.414	.701	.460
227C	23	23	23	23	1.206	1.198	1.420	1.417	1.414	.659	.460
227C	24	24	24	24	1.206	1.198	1.420	1.417	1.414	.610	.460
227C	25	25	25	25	1.206	1.198	1.420	1.417	1.414	.549	.460
227C	26	26	26	26	1.206	1.198	1.420	1.417	1.414	.491	.460
227C	27	27	27	27	1.206	1.198	1.420	1.417	1.414	.424	.460
227C	28	28	28	28	1.206	1.198	1.420	1.417	1.414	.364	.460
227C	29	29	29	29	1.206	1.198	1.420	1.417	1.414	.200	.460
227C	30	30	30	30	1.206	1.198	1.420	1.417	1.414	.900	.500
227C	31	31	31	31	1.206	1.198	1.420	1.417	1.414		
227C	32	32	32	32	1.206	1.198	1.420	1.417	1.414		
227C	33	33	33	33	1.206	1.198	1.420	1.417	1.414		
227C	34	34	34	34	1.206	1.198	1.420	1.417	1.414		
227C	35	35	35	35	1.206	1.198	1.420	1.417	1.414		
227C	36	36	36	36	1.206	1.198	1.420	1.417	1.414		
227C	37	37	37	37	1.206	1.198	1.420	1.417	1.414		
227C	38	38	38	38	1.206	1.198	1.420	1.417	1.414		
227C	39	39	39	39	1.206	1.198	1.420	1.417	1.414		
227C	40	40	40	40	1.206	1.198	1.420	1.417	1.414		
227C	41	41	41	41	1.206	1.198	1.420	1.417	1.414		
227C	42	42	42	42	1.206	1.198	1.420	1.417	1.414		
227C	43	43	43	43	1.206	1.198	1.420	1.417	1.414		
227C	44	44	44	44	1.206	1.198	1.420	1.417	1.414		
227C	45	45	45	45	1.206	1.198	1.420	1.417	1.414		
227C	46	46	46	46	1.206	1.198	1.420	1.417	1.414		
227C	47	47	47	47	1.206	1.198	1.420	1.417	1.414		
227C	48	48	48	48	1.206	1.198	1.420	1.417	1.414		
227C	49	49	49	49	1.206	1.198	1.420	1.417	1.414		
227C	50	50	50	50	1.206	1.198	1.420	1.417	1.414		
227C	51	51	51	51	1.206	1.198	1.420	1.417	1.414		
227C	52	52	52	52	1.206	1.198	1.420	1.417	1.414		
227C	53	53	53	53	1.206	1.198	1.420	1.417	1.414		
227C	54	54	54	54	1.206	1.198	1.420	1.417	1.414		
227C	55	55	55	55	1.206	1.198	1.420	1.417	1.414		
227C	56	56	56	56	1.206	1.198	1.420	1.417	1.414		
227C	57	57	57	57	1.206	1.198	1.420	1.417	1.414		
227C	58	58	58	58	1.206	1.198	1.420	1.417	1.414		
227C	59	59	59	59	1.206	1.198	1.420	1.417	1.414		
227C	60	60	60	60	1.206	1.198	1.420	1.417	1.414		
227C	61	61	61	61	1.206	1.198	1.420	1.417	1.414		
227C	62	62	62	62	1.206	1.198	1.420	1.417	1.414		
227C	63	63	63	63	1.206	1.198	1.420	1.417	1.414		
227C	64	64	64	64	1.206	1.198	1.420	1.417	1.414		
227C	65	65	65	65	1.206	1.198	1.420	1.417	1.414		
227C	66	66	66	66	1.206	1.198	1.420	1.417	1.414		
227C	67	67	67	67	1.206	1.198	1.420	1.417	1.414		
227C	68	68	68	68	1.206	1.198	1.420	1.417	1.414		
227C	69	69	69	69	1.206	1.198	1.420	1.417	1.414		
227C	70	70	70	70	1.206	1.198	1.420	1.417	1.414		
227C	71	71	71	71	1.206	1.198	1.420	1.417	1.414		
227C	72	72	72	72	1.206	1.198	1.420	1.417	1.414		
227C	73	73	73	73	1.206	1.198	1.420	1.417	1.414		
227C	74	74	74	74	1.206	1.198	1.420	1.417	1.414		
227C	75	75	75	75	1.206	1.198	1.420	1.417	1.414		
227C	76	76	76	76	1.206	1.198	1.420	1.417	1.414		
227C	77	77	77	77	1.206	1.198	1.420	1.417	1.414		
227C	78	78	78	78	1.206	1.198	1.420	1.417	1.414		
227C	79	79	79	79	1.206	1.198	1.420	1.417	1.414		
227C	80	80	80	80	1.206	1.198	1.420	1.417	1.414		
227C	81	81	81	81	1.206	1.198	1.420	1.417	1.414		
227C	82	82	82	82	1.206	1.198	1.420	1.417	1.414		
227C	83	83	83	83	1.206	1.198	1.420	1.417	1.414		
227C	84	84	84	84	1.206	1.198	1.420	1.417	1.414		
227C	85	85	85	85	1.206	1.198	1.420	1.417	1.414		
227C	86	86	86	86	1.206	1.198	1.420	1.417	1.414		
227C	87	87	87	87	1.206	1.198	1.420	1.417	1.414		
227C	88	88	88	88	1.206	1.198	1.420	1.417	1.414		
227C	89	89	89	89	1.206	1.198	1.420	1.417	1.414		
227C	90	90	90	90	1.206	1.198	1.420	1.417	1.414		
227C	91	91	91	91	1.206	1.198	1.420	1.417	1.414		
227C	92	92	92	92	1.206	1.198	1.420	1.417	1.414		
227C	93	93	93	93	1.206	1.198	1.420	1.417	1.414		
227C	94	94	94	94	1.206	1.198	1.420	1.417	1.414		
227C	95	95	95	95	1.206	1.198	1.420	1.417	1.414		
227C	96	96	96	96	1.206	1.198	1.420	1.417	1.414		
227C	97	97	97	97	1.206	1.198	1.420	1.417	1.414		
227C	98	98	98	98	1.206	1.198	1.420	1.417	1.414		
227C	99	99	99	99	1.206	1.198	1.420	1.417	1.414		
227C	100	100	100	100	1.206	1.198	1.420	1.417	1.414		
227C	101	101	101	101	1.206	1.198	1.420	1.417	1.414		
227C	102	102	102	102	1.206	1.198	1.420	1.417	1.414		
227C	103	103	103	103	1.206	1.198	1.420	1.417	1.414		
227C	104	104	104	104	1.206	1.198	1.420	1.417	1.414		
227C	105	105	105	105	1.206	1.198	1.420	1.417	1.414		
227C	106	106	106	106	1.206	1.198	1.420	1.417	1.414		
227C	107	107	107	107	1.206	1.198	1.420	1.417	1.414		
227C	108	108	108	108	1.206	1.198	1.420	1.417	1.414		
227C	109	109	109	109	1.206	1.198	1.420	1.417	1.414		
227C	110	110	110	110	1.206	1.198	1.420	1.417	1.414		
227C	111	111	111	111	1.206	1.198	1.420	1.417	1.414		
227C	112	112	112	112	1.206	1.198	1.420	1.417	1.414		
227C	113	113	113	113	1.206	1.198	1.420	1.417	1.414		
227C	114	114	114	114	1.206	1.198	1.420	1.417	1.414		
227C	115	115	115	115	1.206	1.198	1.420	1.417	1.414		
227C	116	116	116	116	1.206	1.198	1.420	1.417	1.414		
227C	117	117	117	117	1.206	1.198	1.420	1.417	1.414		
227C	118	118	118	118	1.206	1.198	1.420	1.417	1.414		
227C	119	119	119	119	1.206	1.198	1.420	1.417	1.414		
22											

B. GE 6.0 ah

1. Pack 201A, 5-cells

a. Cell information:

(1) The cells were purchased, and provided for test, by NASA, GSFC for the purpose of establishing the life capabilities of sealed nickel-cadmium cells for communication satellites in a synchronous orbit. These cells began test on 18 July 1967. The manufacturer's catalog number is 42B006AB06. Acceptance test results and detailed cell descriptions are contained in the NAD Crane Report QE/C 67-387 of 28 June 1967. The results of the first 6 eclipse seasons were reported in the NAD Crane Report QE/C 70-634 of 14 August 1970, and seasons 7 through 10 were reported in the NAD Crane Report QEEL/C 73-302 of 15 October 1973. It is noted that these cells are indicative of cell design and manufacturing practices used prior to 1970. Discussions with the manufacturer indicate several significant differences in plate design, interelectrode spacing as well as processing techniques as compared with cells made since 1970.

b. Parameters:

Depth of Discharge (%)	40	Discharge Current (amps)	2.0
Charge Control	CC	Temperature (°C)	40
Charge Current (amps)	.20	Float Current (amps)	.20

c. Capacity Checks: (Discharge to .50 volts any cell or to an average voltage of 1.00 volts per cell, whichever occurs first.)

	ah*
	out
Shadow 11	3.70
Postcycling	3.47

*--Discharge to 0.0 volts

d. Test results during Eclipse Season (Figures 19 to 21).

(1) Cells 1, 2 and 3 failed (0.0 volts during discharge), and were discontinued prior to eclipse season 11s' capacity check. Cell 5 was removed prior to the start of season 8 for analysis. The pack (cell 4) was discontinued following shadow 11.

(2) End of Discharge Voltages: The increase in the low end of discharge voltages, at the beginning of shadow period 11, is due to the discontinuance of cells 1, 2 and 3. When a cell failed, the discharge was terminated and the pack was placed on charge. Therefore, the remaining cells in the pack were not discharged the proper length of time which resulted in low ampere-hours out and higher EOD voltages.

e. Performance during Sun Period: The pack began test with a sun period and completed 11 of these periods before being discontinued. Following is a listing of the high, average and low cell voltages during the last sun period.

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Sun Period 11		
<u>Voltages**</u>	<u>Start</u>	<u>End</u>
High	1.406(1)	1.335(1)
Average	1.400	1.322
Low	1.396(4)	1.300(4)

**--() indicates which cell

f. Cell Analysis:

(1) Cell 2 was torn down with the following observations:

(a) Separator deterioration was evident as the material was extremely thin.

(b) Separator material was moist.

(c) No discoloration, as a result of migration, was observed on the separator material.

(d) One side and the bottom of the positive plates were not coined which led to a small amount of flaking of the active material along the sides of these plates.

(e) The broad sides of the cell case were bulged and pressure was relieved when the cell was opened.

(2) Cell 5.

(a) Following are the photographs showing the visual analysis of cell 5 which completed 7 eclipse seasons.

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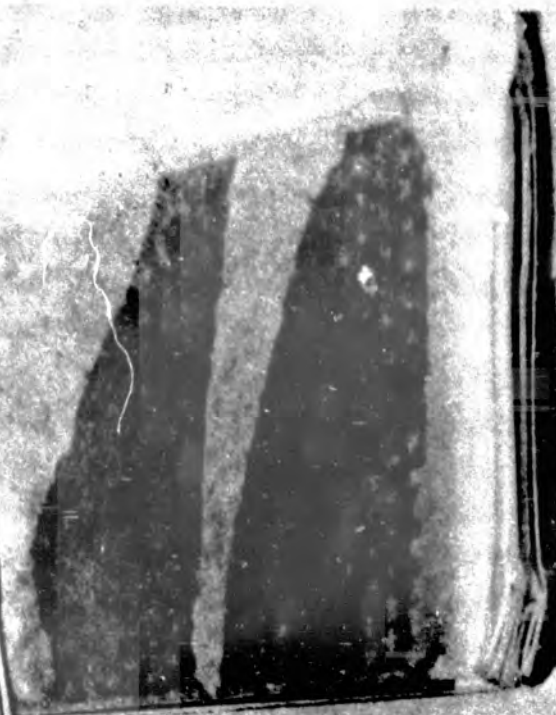
This picture reveals the large amount of moisture found in this cell. Moisture causes the separator to cling to the plate in the darkened areas; while the "wedge shaped" pattern across the center, and the corner immediately below "sync 1" reveal tight areas corresponding to the separator being slightly lifted from the plate.

PHOTOGRAPH 1

44

cm
SPECIMEN Sync 1
Cell 5
DATE 11-24-77

MQEC/C 77-134



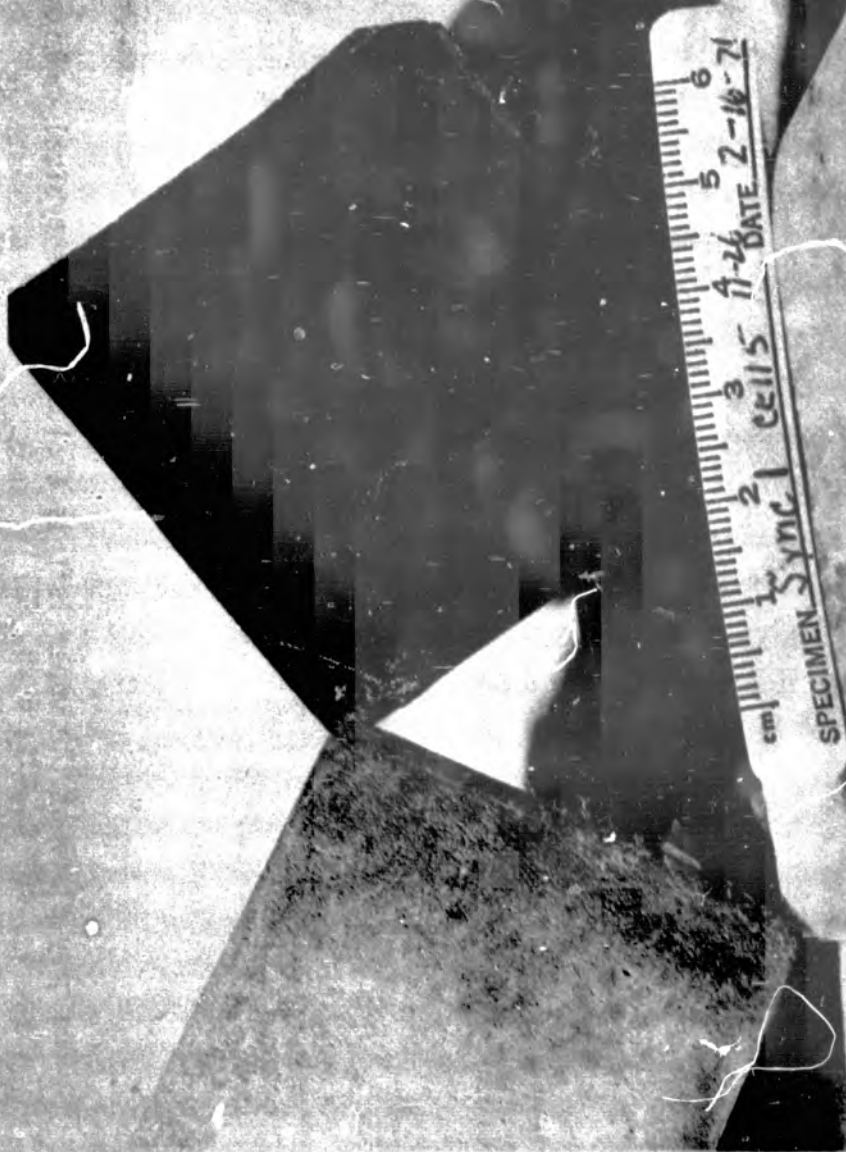
The gray plate at the upper left is a close-up of a typical cadmium plate.
(Sync 1: 40° C, 40%, 6 ah, GE)

PHOTOGRAPH 2

45

MQEC/C 77-134

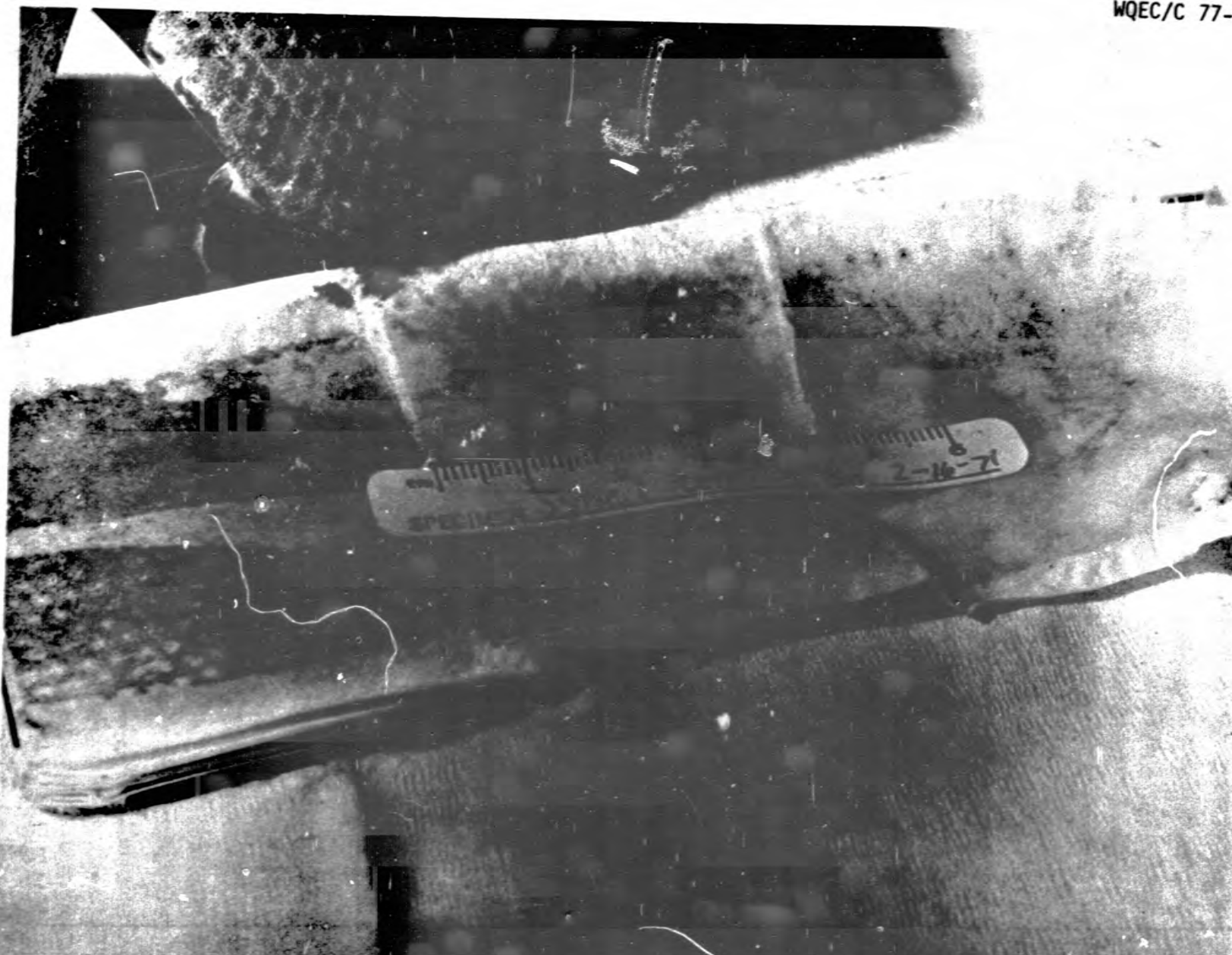
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The dark area at the upper right is a typical nickel plate. The darkened area of this plate is due to excessive moisture. (Sync 1: 40° C, 40%, 6 ah, GE)

PHOTOGRAPH 3

WQEC/C 77-134



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The separator material does not show the excessive migration for this cell that often appears in cells containing less electrolyte. (Sync 1: 40° C, 40%, 6 ah, GE)

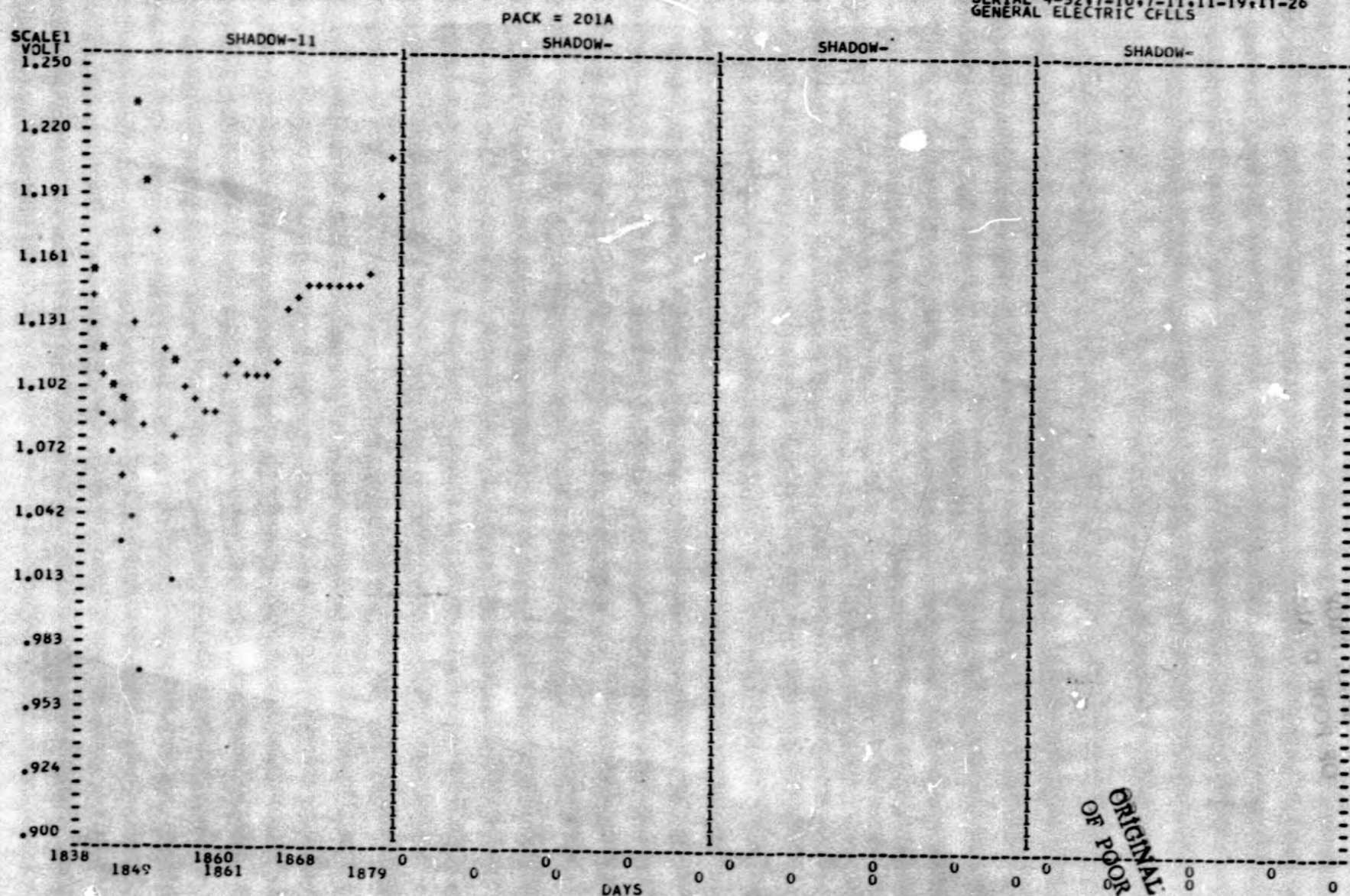
PHOTOGRAPH 4

KEY
 * HIGH END DISCHARGE VOLTAGE
 • AVE END DISCHARGE VOLTAGE
 • LOW END DISCHARGE VOLTAGE

SYNCHRONOUS ORBIT SHADOW PLOT

MQEC/C 77-134

DEPTH DISCHARGE 40
 TEMPERATURE 40
 AMPERE RATE 6.0
 SERIAL 4-32, 7-10, 7-11, 11-19, 11-26
 GENERAL ELECTRIC CFLLS



NOTE: (1) Cell 5 removed for analysis prior to Shadow 8.
 (2) Cells 1, 2 and 3 failed prior to capacity check of Shadow 11.
 (3) Pack discontinued following Shadow 11.

FIGURE 19

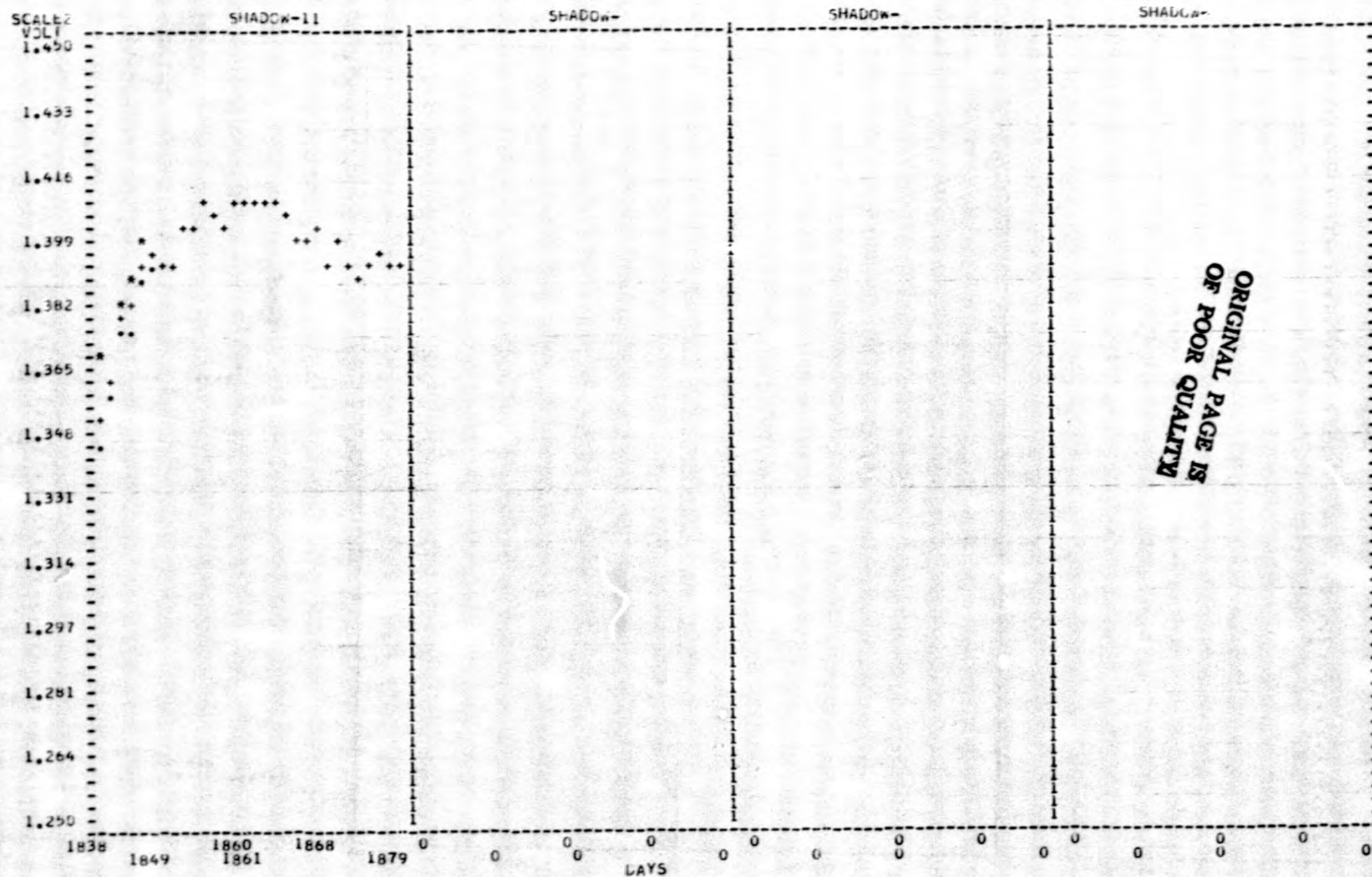
ORIGINAL PAGE IS
 OF POOR QUALITY

KEY
 * HIGH EOC
 + AVE EOC
 • LOW EOC

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 40
 TEMPERATURE 40
 AMPERE RATE 6.0
 SERIAL 4-32, 7-10, 7-11, 11-10, 11-26
 GENERAL ELECTRIC CELLS

PACK = 201A



ORIGINAL PAGE IS
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NOTE: (1) Cell 5 removed for analysis prior to Shadow 8.
 (2) Cells 1, 2 and 3 failed prior to capacity check of Shadow 11.
 (3) Pack discontinued following Shadow 11.

FIGURE 20

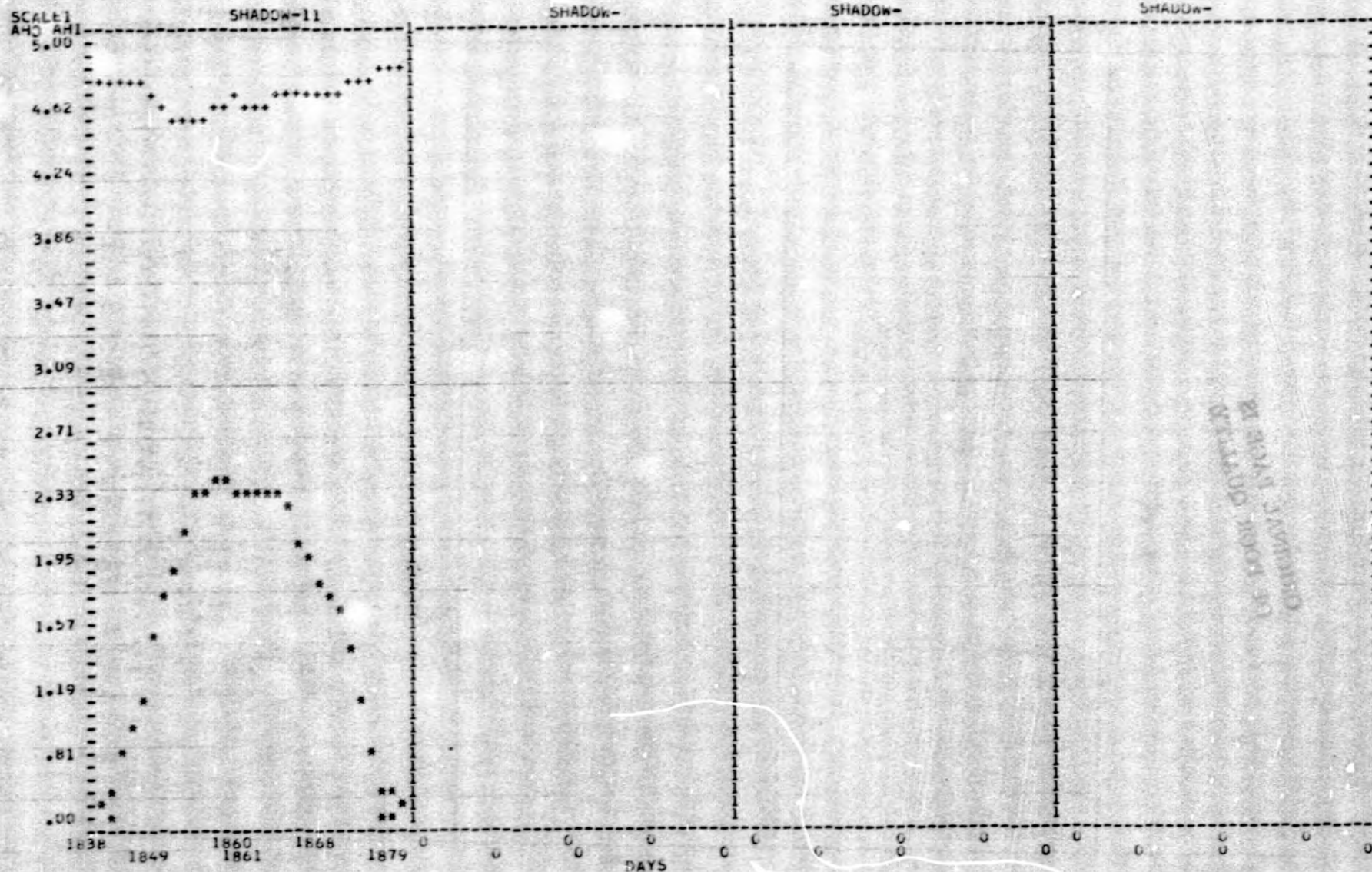
KEY
* AHJ
+ AHJ-TOTAL

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 201A

DEPTH DISCHARGE 40
TEMPERATURE 40
AMPERE RATE 8.0
SERIAL 4-32,7-10,7-11,11-19,11-26
GENERAL ELECTRIC CELLS

WQEC/C 77-134



NOTE: (1) Cell 5 removed for analysis prior to Shadow 8.
(2) Cells 1, 2 and 3 failed prior to capacity check of Shadow 11.
(3) Pack discontinued following Shadow 11.

FIGURE 21

2. Pack 202A, 5-cells

a. Cell information: (Same as Pack 201A, Section V. B.1.).

b. Parameters:

Depth of Discharge (%)	40	Discharge Current (amps)	2.0
Charge Control	CC	Temperature (°C)	25
Charge Current (amps)	.20	Float Current (amps)	.20

c. Capacity checks: (Discharge to .50 volts any cell or to an average voltage of 1.00 volts per cell, whichever occurs first.)

	Cell <u>1</u>	Cell <u>2</u>	Cell <u>3</u>	Cell <u>4</u>	Cell <u>5</u>	ah <u>out</u>
Shadow 11					*	3.23
Shadow 12	1.048	.677	1.146	1.028		3.86
Shadow 13	1.225	1.004	1.162	.634		3.28
Shadow 14	.998	.813	1.152	1.034		3.49
Shadow 15	1.089	1.057	1.165	.003		4.90
Shadow 16	.808	.423	1.110	**		3.90
Shadow 17	.793	.415	1.104			3.60

*--Removed for analysis prior to shadow 8

**--Failed, 5th day of shadow 16

d. Test results during Eclipse Seasons: (Figures 22 to 27).

(1) Cell 4 failed on the 5th day of shadow 16. It was allowed to remain in the circuit and reverse during discharge. It shorted during charge on the 7th day. Cell 5 was removed for analysis prior to shadow 8.

(2) End of Discharge Voltages: The reconditioning effect, due to the capacity check during shadow 17, was that the cells were 10 millivolts higher at the end of discharge following the capacity check than they were before the capacity check. The low voltages, at the beginning of shadow 13, was due to the pack being discharged to long.

(3) End of Charge Voltages: There is a wide divergence at the beginning of each shadow period which diminishes after approximately 20 days. This has been the trend since shadow 6.

e. Performance during Sun Periods: The pack began test with a sun period and has now completed 18 periods. Following is a listing of the high, average and low cell voltages at the start and end of sun periods 11 through 18.

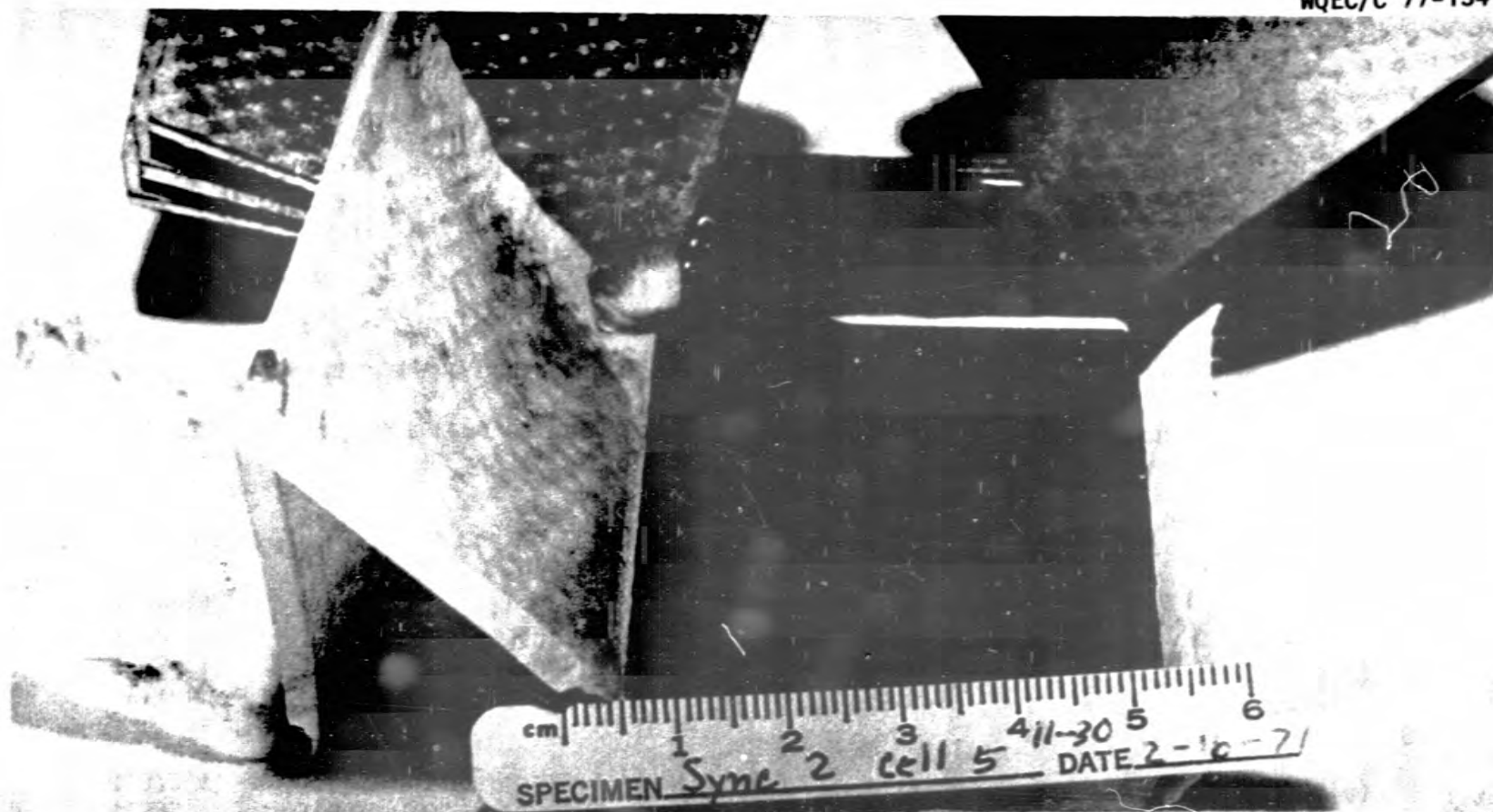
Sun Periods									
Voltages***	11		12		13		14		End
	Start	End	Start	End	Start	End	Start	End	
	High	1.405(2)	1.420(3)	1.406(2)	1.415(2)	1.440(2)	1.411(1)	1.415(1)	
	Average	1.395	1.391	1.395	1.398	1.419	1.399	1.410	
Voltages	15		16		17		18		End
	Start	End	Start	End	Start	End	Start	End	
	High	1.439(1)	1.398(4)	1.406(1)	1.403(1)	1.427(2)	1.400(2)	1.463(2)	
	Average	1.425	1.395	1.401	1.389	1.419	1.392	1.433	
Voltages***	11		12		13		14		End
	Start	End	Start	End	Start	End	Start	End	
	High	1.405(2)	1.420(3)	1.406(2)	1.415(2)	1.440(2)	1.411(1)	1.415(1)	
	Average	1.395	1.391	1.395	1.398	1.419	1.399	1.410	
Voltages	15		16		17		18		End
	Start	End	Start	End	Start	End	Start	End	
	High	1.439(1)	1.398(4)	1.406(1)	1.403(1)	1.427(2)	1.400(2)	1.463(2)	
	Average	1.425	1.395	1.401	1.389	1.419	1.392	1.433	
Low	11		12		13		14		End
	Start	End	Start	End	Start	End	Start	End	
	Low	1.373(4)	1.347(4)	1.381(4)	1.370(4)	1.394(4)	1.385(4)	1.404(4)	
	Low	1.406(4)	1.389(2)	1.389(4)	1.372(4)	1.399(1)	1.384(1)	1.416(1)	

***--() indicates which cell

f. Cell Analysis:

(1) Cell 4 was not removed from the pack because doing so would disturb the other cells.

(2) Following are the photographs showing the visual analysis of cell 5 which completed 7 eclipse seasons.

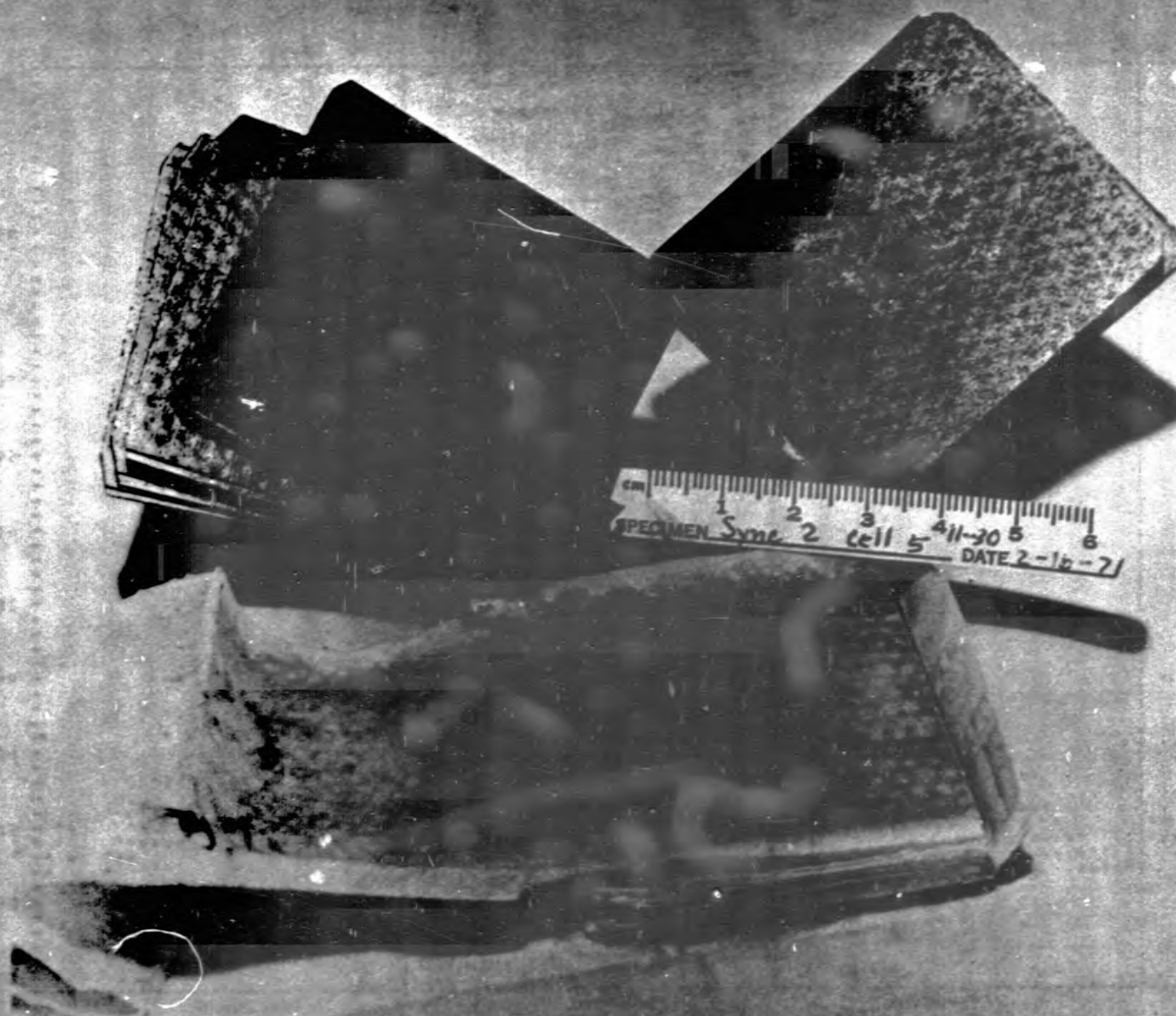


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The positive plate is shown with coined edge within separator fold (left edge, not obvious due to under exposure). Separator was quite moist showing little migration.
(Sync 2: 25° C, 40%, 6 ah, GE)

PHOTOGRAPH 5

WQEC/C 77-134



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Moisture of cell is illustrated plus typical positive and negative plates.
(Sync 2: 25° C, 40%, 6 ah, GE)

PHOTOGRAPH 6

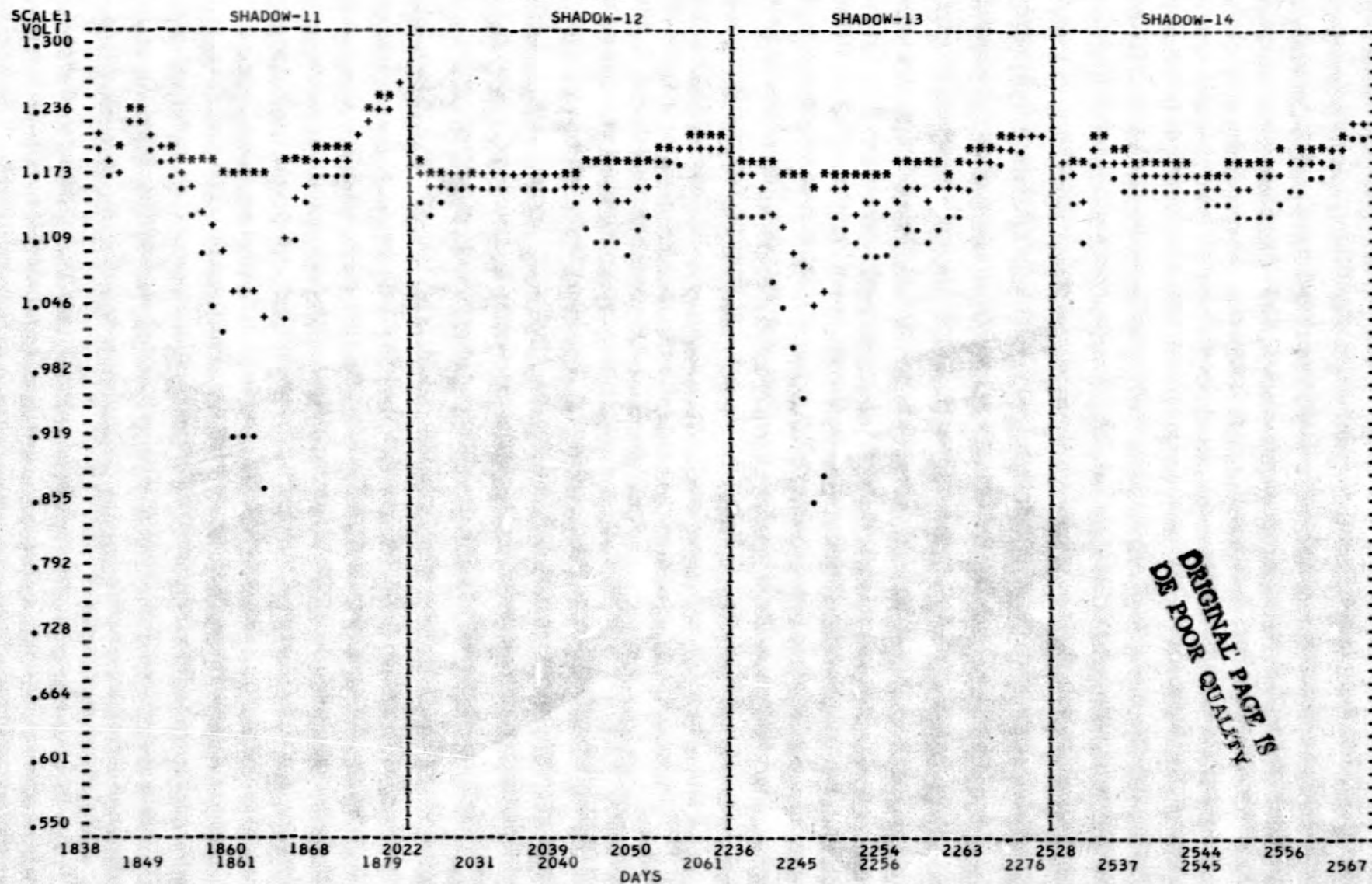
KEY
 * HIGH END DISCHARGE VOLTAGE
 + AVE END DISCHARGE VOLTAGE
 . LOW END DISCHARGE VOLTAGE

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 40
 TEMPERATURE 25
 AMPERE RATE 06
 SERIAL 4-41,4-50,6-21,11-2511-30
 GENERAL ELECTRIC CELLS

WQEC/C 77-134

PACK = 202A



NOTE: Cell 5 removed for analysis prior to Shadow 8.

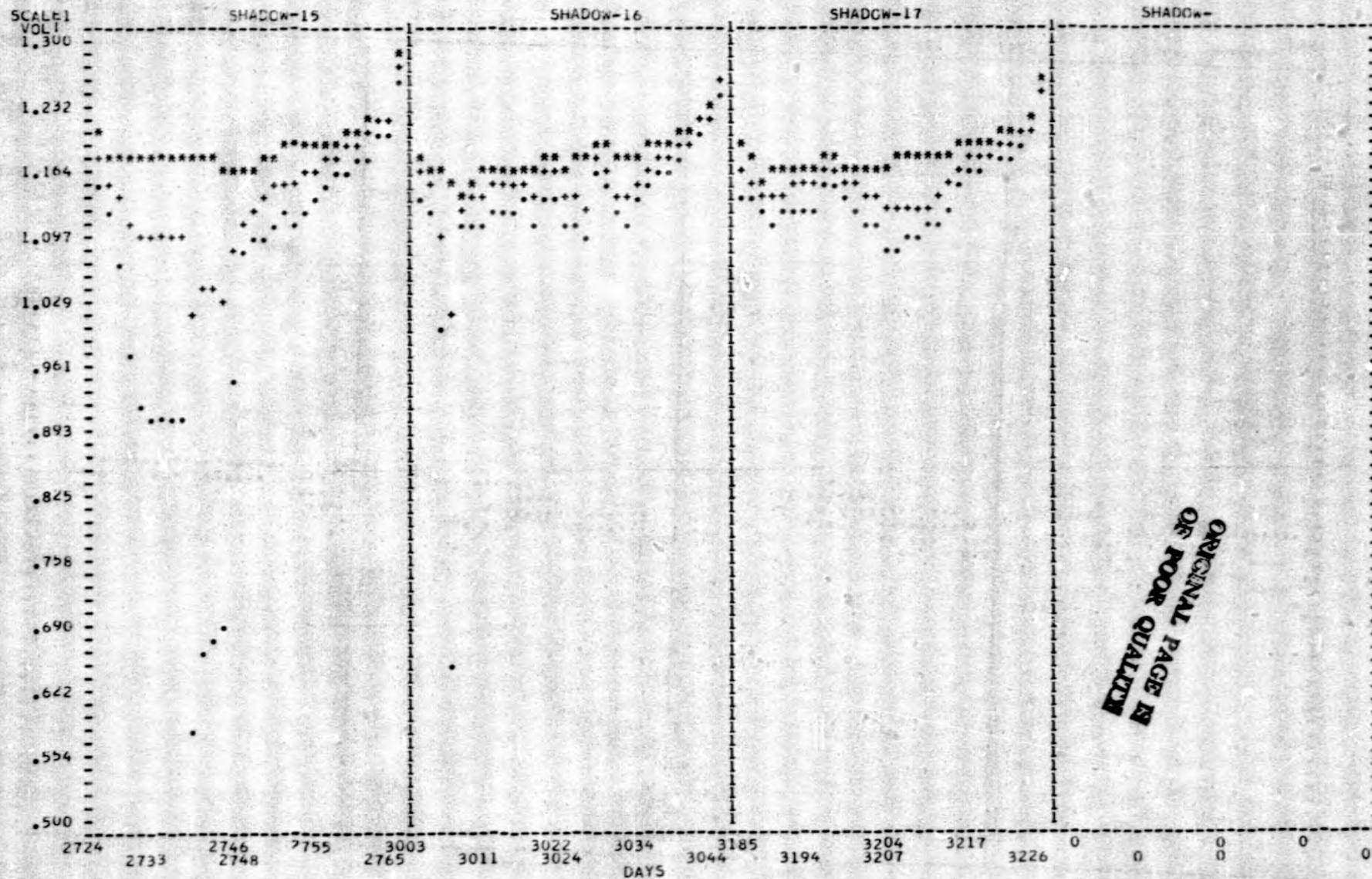
FIGURE 22

KEY
 * HIGH END DISCHARGE VOLTAGE
 + AVE END DISCHARGE VOLTAGE
 • LOW END DISCHARGE VOLTAGE

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 40
 TEMPERATURE 25
 AMPERE RATE 0.6
 SERIAL 4-41, 4-50, 6-21, 11-25, 11-30
 GENERAL ELECTRIC CFI 5

PACK = 202A



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NOTE: (1) Cell 5 removed for analysis prior to Shadow 8.
 (2) Cell 4 failed, 5th day of Shadow 16.

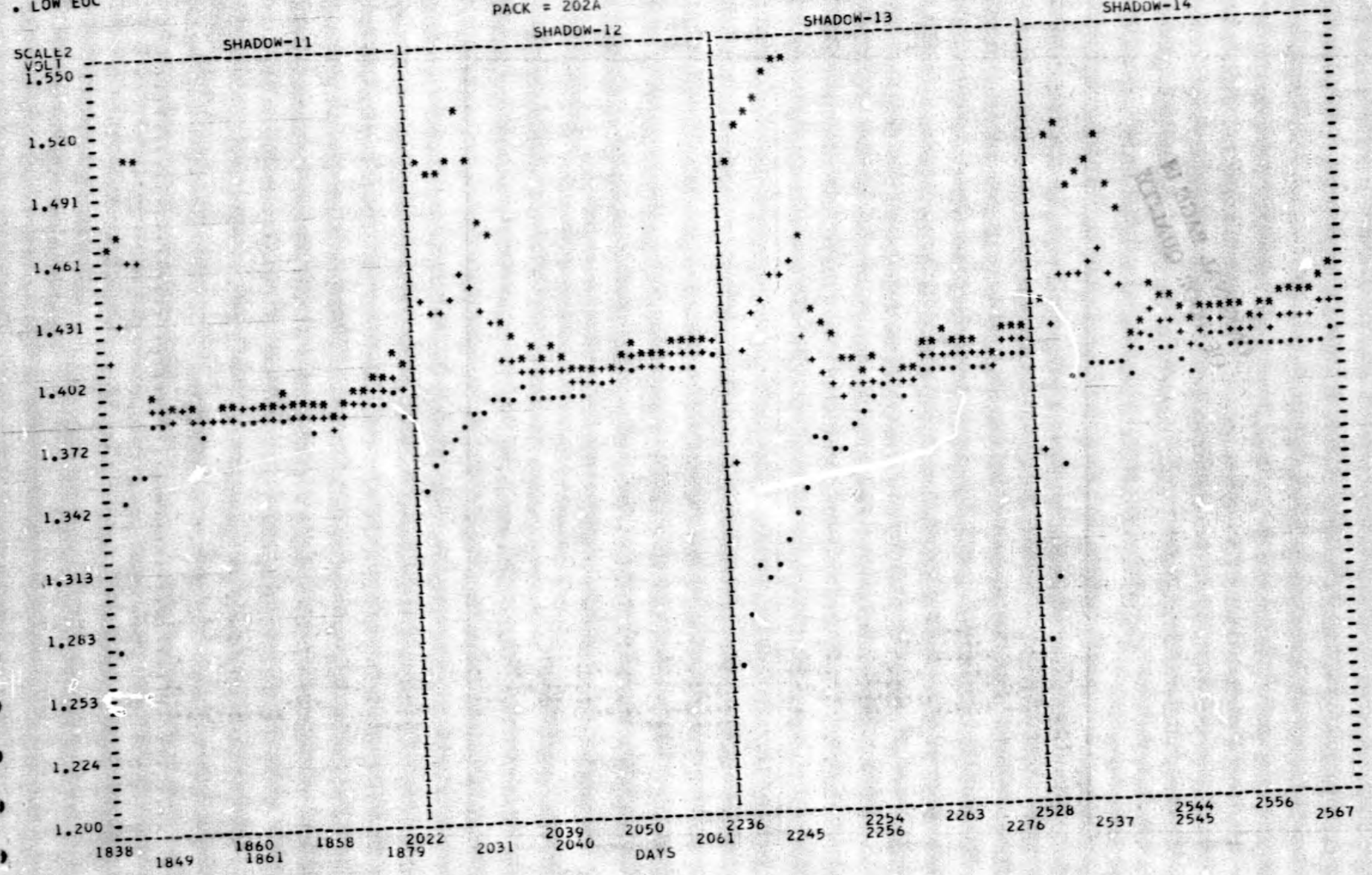
FIGURE 23

DEPTH DISCHARGE 40
 TEMPERATURE 25
 AMPERE RATE 06
 SERIAL 4-41,4-50,6-21,11-2511-30
 GENERAL ELECTRIC CELLS
 WQEC/C 77-134

KEY
 * HIGH EOC
 + AVE EOC
 • LOW EOC

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 202A



NOTE: Cell 5 removed for analysis prior to Shadow 8.

FIGURE 24

KEY
 * HIGH EOC
 + AVE EOC
 • LOW EOC

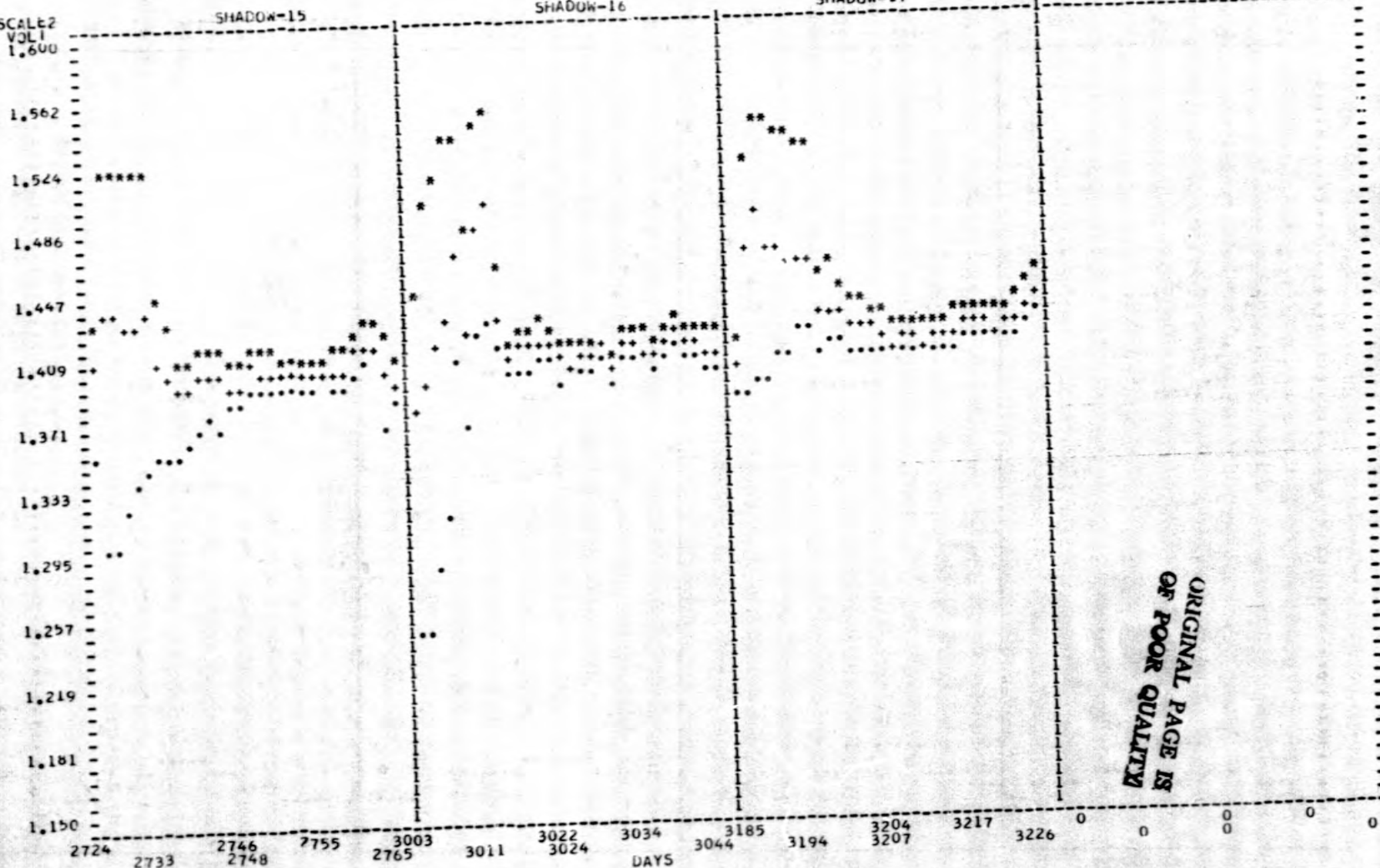
SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 40
 TEMPERATURE 25
 AMPERE RATE 06
 SERIAL 4-41,4-50,6-21,11-25,11-30
 GENERAL ELECTRIC CFI 15

WQEC/C 77-134

PACK = 202A

SCALE 2
 VOL 1
 1.600



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NOTE: (1) Cell 5 removed for analysis prior to Shadow 8.
 (2) Cell 4 failed, 5th day of Shadow 16.

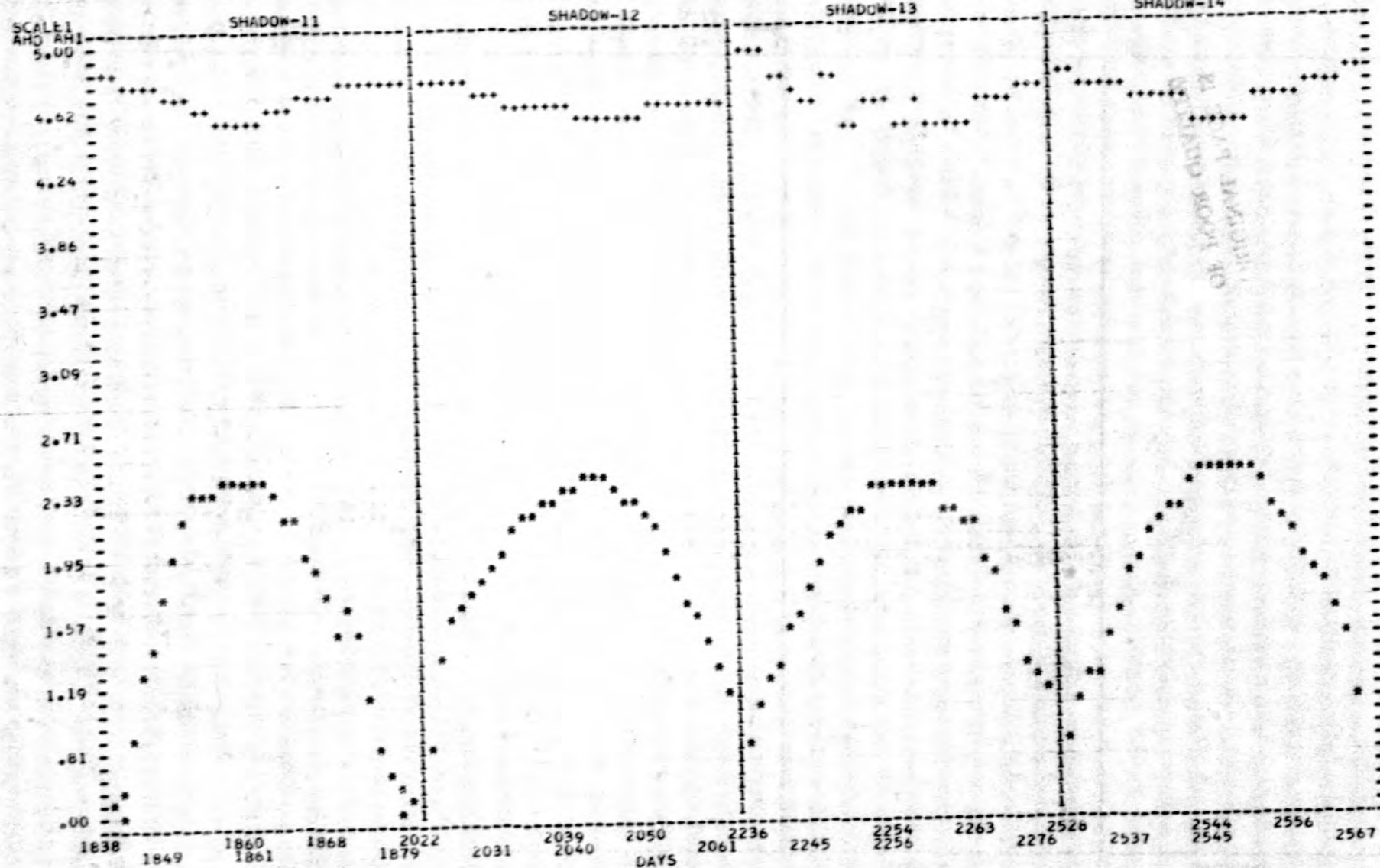
FIGURE 25

KEY
 * AHD
 * AHI-TOTAL

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 40
 TEMPERATURE 25
 AMPERE RATE 06
 SERIAL 4-41,4-50,6-21,11-2511-30
 GENERAL ELECTRIC CELLS

PACK = 202A



NOTE: Cell 5 removed for analysis prior to Shadow 8.

FIGURE 26

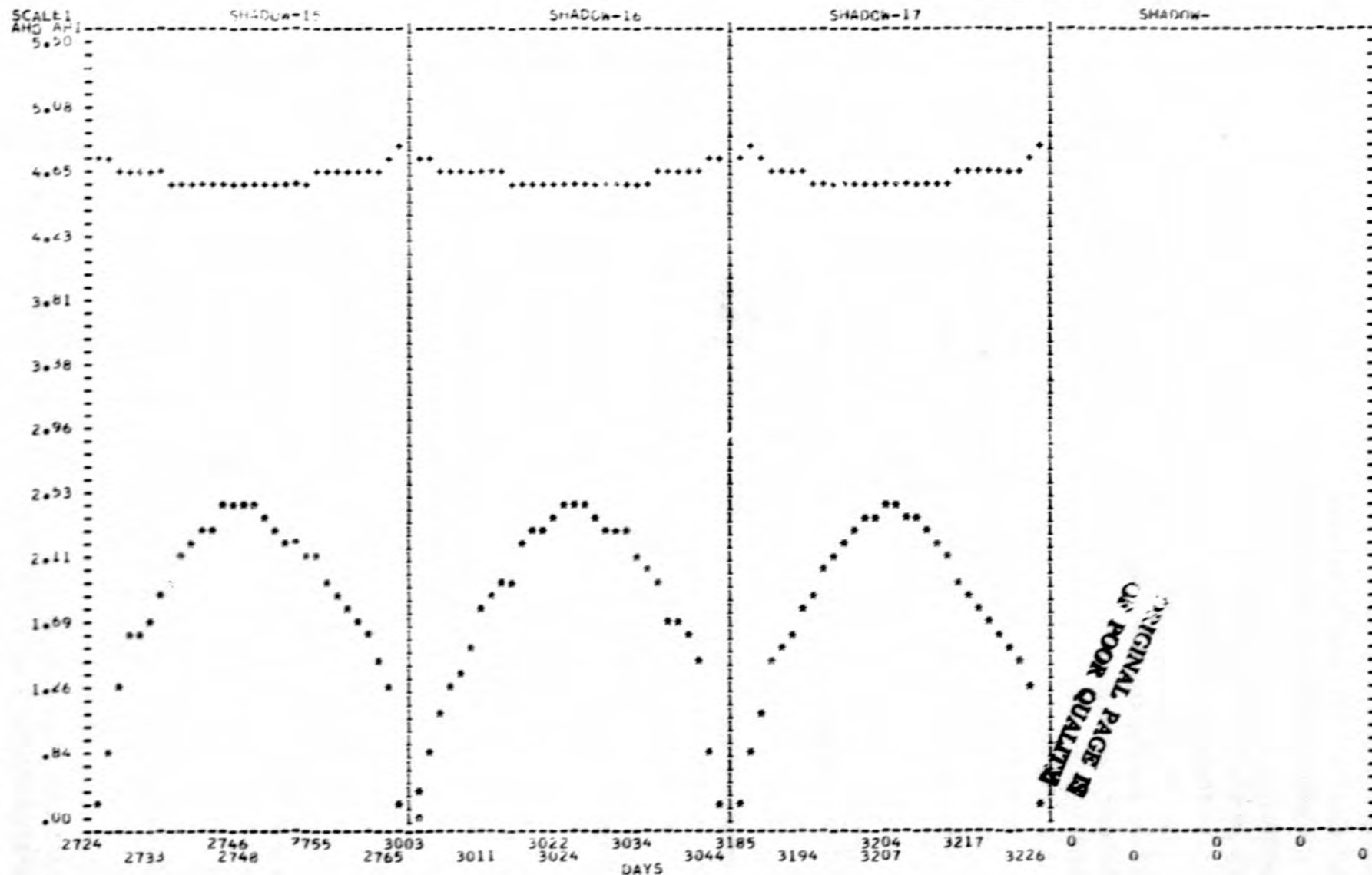
KEY:
• 2H
• 2H1-TOTAL

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 40
TEMPERATURE 25
AMPERE RATE 06
SERIAL 4-41, 4-50, 6-21, 11-25, 11-30
GENERAL ELECTRIC CF115

WQEC/C 77-134

PACK = 202A



NOTE: (1) Cell 5 removed for analysis prior to Shadow 8.
(2) Cell 4 failed, 5th day of Shadow 16.

FIGURE 27

PACK	DAY	HIGH-DIS	SHADOW	AVE-DIS	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AHC	AHI
2020A	1838	1.203	11	2.13	14	1.196	1.467	1.276	536	4.820
2020A	1840	1.191	11	2.06	14	1.176	1.475	1.347	600	4.825
2020A	1842	1.199	11	1.87	14	1.168	1.509	1.360	849	4.760
2020A	1843	1.232	11	2.25	14	1.221	1.509	1.360	235	4.760
2020A	1844	1.232	11	2.25	14	1.221	1.509	1.360	450	4.760
2020A	1849	1.216	11	2.05	14	1.198	1.396	1.386	1.932	4.700
2020A	1851	1.200	11	1.92	14	1.185	1.390	1.385	2.158	4.700
2020A	1853	1.193	11	1.84	14	1.177	1.389	1.385	2.321	4.780
2020A	1854	1.184	11	1.68	14	1.156	1.390	1.387	1.932	4.700
2020A	1855	1.183	11	1.59	14	1.136	1.388	1.386	2.158	4.700
2020A	1856	1.181	11	1.41	14	1.097	1.385	1.381	2.321	4.700
2020A	1857	1.180	11	1.20	14	1.050	1.386	1.379	2.321	4.600
2020A	1859	1.177	11	1.02	14	1.015	1.390	1.381	2.350	4.600
2020A	1860	1.179	11	0.99	14	1.015	1.389	1.385	2.400	4.600
2020A	1861	1.174	11	0.60	14	1.015	1.392	1.388	2.400	4.560
2020A	1862	1.169	11	0.60	14	1.015	1.392	1.388	2.400	4.560
2020A	1863	1.156	11	0.29	14	1.025	1.391	1.387	2.400	4.560
2020A	1864	1.180	11	0.26	14	1.049	1.390	1.385	2.400	4.560
2020A	1865	1.186	11	1.11	14	1.035	1.393	1.383	2.344	4.600
2020A	1866	1.189	11	1.47	14	1.109	1.390	1.388	2.200	4.600
2020A	1867	1.194	11	1.66	14	1.147	1.388	1.386	1.927	4.700
2020A	1868	1.193	11	1.80	14	1.170	1.388	1.380	1.884	4.700
2020A	1869	1.197	11	1.80	14	1.171	1.384	1.381	1.714	4.703
2020A	1871	1.196	11	1.87	14	1.179	1.390	1.378	1.471	4.700
2020A	1873	1.217	11	1.87	14	1.179	1.396	1.384	1.613	4.700
2020A	1875	1.231	11	2.11	14	1.205	1.392	1.389	1.471	4.760
2020A	1876	1.243	11	2.25	14	1.220	1.399	1.388	1.118	4.760
2020A	1877	1.243	11	2.37	14	1.233	1.399	1.389	1.620	4.800
2020A	1879	1.266	11	2.37	14	1.233	1.393	1.389	1.600	4.800
2020A	2022	1.183	11	2.63	14	1.45	1.406	1.396	1.536	4.800
2020A	2025	1.171	11	1.71	14	1.41	1.411	1.397	1.808	4.800
2020A	2026	1.173	11	1.62	14	1.49	1.502	1.400	1.367	4.800
2020A	2027	1.174	11	1.65	14	1.54	1.494	1.432	1.374	4.778
2020A	2028	1.174	11	1.67	14	1.58	1.501	1.439	1.378	4.759
2020A	2029	1.172	11	1.68	14	1.59	1.526	1.452	1.381	4.728
2020A	2030	1.173	11	1.66	14	1.59	1.504	1.442	1.390	4.700
2020A	2031	1.169	11	1.67	14	1.63	1.474	1.433	1.391	4.639
2020A	2033	1.170	11	1.	14	1.62	1.464	1.428	1.391	4.728
2020A	2034	1.172	11	1.70	14	1.67	1.423	1.409	1.391	4.700
2020A	2035	1.174	11	1.70	14	1.67	1.420	1.406	1.699	4.642
2020A	2036	1.175	11	1.70	14	1.65	1.406	1.402	1.169	4.639
2020A	2037	1.176	11	1.68	14	1.64	1.403	1.397	1.184	4.640
2020A	2038	1.176	11	1.67	14	1.60	1.410	1.390	1.254	4.640
2020A	2039	1.175	11	1.63	14	1.59	1.413	1.391	1.260	4.640
2020A	2040	1.175	11	1.61	14	1.54	1.409	1.389	1.330	4.600
2020A	2042	1.189	11	1.60	14	1.51	1.404	1.390	1.320	4.600
2020A	2043	1.184	11	1.49	14	1.26	1.399	1.388	1.420	4.560
2020A	2044	1.186	11	1.53	14	1.05	1.400	1.392	1.420	4.560
2020A	2046	1.184	11	1.52	14	1.15	1.404	1.393	1.420	4.560
2020A	2047	1.182	11	1.44	14	1.13	1.400	1.397	1.340	4.570
2020A	2049	1.184	11	1.57	14	1.095	1.407	1.394	1.250	4.570
2020A	2050	1.187	11	1.66	14	1.124	1.411	1.400	1.250	4.540
2020A	2052	1.193	11	1.80	14	1.141	1.408	1.403	1.180	4.580
2020A	2054	1.200	11	1.67	14	1.167	1.408	1.400	1.100	4.590
2020A	2056	1.203	11	1.92	14	1.184	1.410	1.399	1.940	4.610
2020A	2057	1.207	11	1.96	14	1.190	1.413	1.406	1.780	4.600
2020A	2058	1.207	11	2.01	14	1.195	1.413	1.408	1.630	4.600
2020A	2058	1.207	11	2.02	14	1.195	1.413	1.408	1.400	4.600

PACK	DAY	HIGH-DIS	AVE-DIS	LOW-DIS	HIGH-CHAH	AVE-CHAH	LOW-CHAH	AHU	AHI
202A	2059.	1.203	1.203	1.196	1.414	1.409	1.405	1.300	4.600
202A	2061.	1.204	1.199	1.199	1.416	1.411	1.406	1.700	4.600
202A	2236.	1.183	1.169	1.134	1.498	1.356	1.260	.800	4.900
202A	2237.	1.169	1.131	1.131	1.513	1.409	1.283	1.000	4.900
202A	2238.	1.183	1.164	1.129	1.522	1.426	1.308	1.200	4.900
202A	2239.	1.180	1.133	1.077	1.526	1.433	1.303	.300	4.800
202A	2240.	1.170	1.118	1.043	1.539	1.442	1.306	1.500	4.800
202A	2242.	1.168	1.102	1.004	1.547	1.444	1.318	1.600	4.700
202A	2243.	1.167	1.084	.959	1.547	1.452	1.328	1.700	4.600
202A	2245.	1.163	1.042	.860	1.461	1.413	1.345	1.900	4.600
202A	2247.	1.163	1.054	.884	1.427	1.401	1.362	2.000	4.800
202A	2249.	1.167	1.140	1.120	1.420	1.396	1.364	2.100	4.800
202A	2250.	1.178	1.155	1.110	1.415	1.392	1.362	2.200	4.500
202A	2251.	1.175	1.141	1.099	1.404	1.386	1.363	2.200	4.500
202A	2252.	1.179	1.144	1.099	1.403	1.388	1.370	2.300	4.600
202A	2253.	1.177	1.143	1.098	1.397	1.388	1.378	2.300	4.600
202A	2254.	1.175	1.130	1.096	1.399	1.392	1.385	2.300	4.600
202A	2255.	1.183	1.152	1.113	1.398	1.394	1.390	2.300	4.500
202A	2256.	1.189	1.161	1.122	1.392	1.390	1.388	2.300	4.500
202A	2257.	1.186	1.159	1.120	1.395	1.390	1.384	2.300	4.600
202A	2258.	1.181	1.149	1.103	1.393	1.390	1.388	2.300	4.500
202A	2259.	1.185	1.162	1.127	1.409	1.403	1.397	2.200	4.500
202A	2260.	1.175	1.164	1.131	1.410	1.402	1.395	2.200	4.500
202A	2262.	1.187	1.165	1.133	1.412	1.403	1.395	2.100	4.500
202A	2263.	1.194	1.181	1.161	1.407	1.402	1.397	2.100	4.500
202A	2265.	1.199	1.185	1.167	1.409	1.404	1.400	1.900	4.600
202A	2267.	1.199	1.191	1.180	1.405	1.400	1.396	1.800	4.600
202A	2269.	1.205	1.199	1.190	1.404	1.400	1.394	1.600	4.600
202A	2271.	1.208	1.203	1.196	1.403	1.399	1.394	1.500	4.600
202A	2272.	1.214	1.210	1.203	1.412	1.405	1.399	1.300	4.700
202A	2274.	1.215	1.211	1.205	1.412	1.405	1.399	1.200	4.700
202A	2276.	1.216	1.213	1.208	1.415	1.409	1.404	1.100	4.700
202A	2528.	1.190	1.183	1.176	1.424	1.357	1.264	.800	4.800
202A	2529.	1.191	1.168	1.146	1.503	1.415	1.292	1.000	4.800
202A	2530.	1.181	1.146	1.106	1.508	1.434	1.292	1.000	4.800
202A	2532.	1.212	1.197	1.186	1.481	1.435	1.350	1.200	4.700
202A	2533.	1.205	1.191	1.180	1.486	1.436	1.392	1.400	4.700
202A	2534.	1.199	1.183	1.171	1.492	1.442	1.394	1.600	4.700
202A	2536.	1.196	1.180	1.166	1.503	1.447	1.394	1.800	4.700
202A	2537.	1.189	1.176	1.164	1.481	1.438	1.395	1.900	4.600
202A	2538.	1.189	1.172	1.163	1.464	1.432	1.398	2.000	4.600
202A	2539.	1.181	1.163	1.154	1.410	1.401	1.389	2.100	4.600
202A	2540.	1.180	1.164	1.150	1.415	1.408	1.400	2.150	4.600
202A	2541.	1.180	1.164	1.150	1.418	1.418	1.405	2.200	4.600
202A	2542.	1.180	1.164	1.150	1.427	1.416	1.404	2.300	4.600
202A	2543.	1.175	1.158	1.158	1.426	1.414	1.399	2.400	4.500
202A	2544.	1.174	1.153	1.153	1.418	1.409	1.395	2.400	4.500
202A	2545.	1.174	1.153	1.153	1.415	1.402	1.392	2.400	4.500
202A	2546.	1.187	1.168	1.142	1.418	1.409	1.403	2.400	4.500
202A	2547.	1.183	1.164	1.131	1.422	1.412	1.405	2.400	4.500
202A	2548.	1.183	1.166	1.133	1.422	1.412	1.405	2.400	4.500
202A	2549.	1.184	1.167	1.136	1.422	1.410	1.402	2.300	4.600
202A	2550.	1.190	1.168	1.140	1.417	1.408	1.401	2.200	4.600
202A	2551.	1.193	1.177	1.148	1.416	1.407	1.401	2.100	4.600
202A	2552.	1.191	1.180	1.156	1.422	1.411	1.402	2.000	4.600
202A	2553.	1.193	1.182	1.162	1.421	1.409	1.399	1.900	4.600
202A	2554.	1.196	1.186	1.170	1.423	1.411	1.401	1.800	4.700
202A	2555.	1.198	1.190	1.176	1.423	1.411	1.400	1.700	4.700
202A	2556.	1.201	1.194	1.184	1.426	1.414	1.402	1.600	4.700

ORIGINAL PAGE IS
OF POOR QUALITY

PACK	DAY	HIGH-DIS	AVE-DIS	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AHO	AH1
202A	2563.	1.210	1.204	1.192	1.427	1.414	1.403	1.400	4.700
202A	2565.	1.229	1.223	1.213	1.433	1.418	1.404	1.000	4.800
202A	2567.	1.227	1.221	1.214	1.439	1.421	1.406	.400	4.800
1	.01271	1.30000	59.90000		.64900	131.60000			

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OUT OF RANGE ARGUMENT TO IFIX

2	.00000	.00000	*****	9999.00000	15.00000
3	.00593	1.55000	121.00000	1.26000	159.70000
4	.07627	5.00000	3.50000	.40000	49.50000

DE FOR DELETED
DIRECTIVE 1-1-77

DATE OF RUN IS 08/27/76
 BACK DAY HIGH-DIS
 BACK = 2024 SHADOW = 15 16 17

			AVE-DIS	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AHU	AHI
202A	2724.	202	1.84	1.147	1.432	1.409	1.354	1.536	4.741
202A	2725.	202	1.73	1.130	1.521	1.440	1.300	1.830	4.700
202A	2727.	202	1.42	1.075	1.521	1.441	1.300	1.244	4.680
202A	2729.	202	1.11	1.969	1.526	1.431	1.327	1.567	4.660
202A	2730.	202	1.76	1.920	1.526	1.436	1.339	1.644	4.643
202A	2731.	202	1.00	1.912	1.524	1.439	1.352	1.728	4.620
202A	2733.	202	1.74	1.913	1.444	1.406	1.358	1.850	4.616
202A	2734.	202	1.03	1.911	1.429	1.404	1.359	1.970	4.600
202A	2736.	202	1.75	1.911	1.412	1.395	1.358	2.100	4.580
202A	2738.	202	1.03	1.580	1.407	1.391	1.364	2.219	4.540
202A	2739.	202	1.75	1.039	1.416	1.400	1.374	1.304	4.540
202A	2740.	202	1.77	1.661	1.414	1.400	1.376	1.321	4.544
202A	2741.	202	1.74	1.037	1.415	1.399	1.373	1.407	4.558
202A	2743.	202	1.71	1.035	1.408	1.396	1.383	1.489	4.560
202A	2746.	202	1.69	1.089	1.410	1.397	1.383	1.490	4.557
202A	2748.	202	1.70	1.115	1.420	1.406	1.395	1.407	4.557
202A	2749.	202	1.70	1.288	1.419	1.405	1.394	1.324	4.560
202A	2750.	202	1.74	1.139	1.418	1.403	1.393	1.313	4.576
202A	2751.	202	1.78	1.149	1.412	1.401	1.396	1.219	4.584
202A	2752.	202	1.85	1.155	1.413	1.401	1.395	1.229	4.584
202A	2753.	202	1.89	1.151	1.411	1.400	1.395	1.143	4.590
202A	2754.	202	1.88	1.121	1.413	1.402	1.397	1.079	4.613
202A	2755.	202	1.90	1.161	1.413	1.402	1.398	1.968	4.612
202A	2756.	202	1.92	1.173	1.414	1.404	1.397	1.887	4.621
202A	2757.	202	1.98	1.181	1.415	1.404	1.397	1.804	4.620
202A	2758.	202	2.00	1.188	1.427	1.413	1.402	1.722	4.645
202A	2759.	202	2.10	1.197	1.431	1.418	1.412	1.640	4.660
202A	2759.	202	2.18	1.201	1.434	1.420	1.415	1.394	4.687
202A	2761.	202	2.23	1.212	1.426	1.404	1.371	1.230	4.749
202A	2762.	202	2.25	1.205	1.406	1.397	1.389	1.494	4.853
202A	2765.	202	2.83	1.268	1.444	1.381	1.248	1.560	4.750
202A	3003.	202	1.82	1.166	1.504	1.396	1.246	1.830	4.720
202A	3004.	202	1.67	1.148	1.519	1.420	1.284	1.070	4.690
202A	3005.	202	1.59	1.103	1.537	1.436	1.317	1.240	4.680
202A	3006.	202	1.57	1.017	1.536	1.467	1.409	1.340	4.650
202A	3007.	202	1.39	1.129	1.588	1.425	1.374	1.490	4.640
202A	3009.	202	1.49	1.136	1.549	1.485	1.425	1.740	4.640
202A	3010.	202	1.59	1.141	1.556	1.485	1.432	1.820	4.630
202A	3011.	202	1.65	1.149	1.461	1.436	1.419	1.900	4.620
202A	3012.	202	1.64	1.151	1.429	1.412	1.402	1.980	4.620
202A	3013.	202	1.67	1.153	1.441	1.414	1.404	2.210	4.630
202A	3016.	202	1.68	1.157	1.421	1.415	1.404	1.260	4.570
202A	3017.	202	1.64	1.143	1.430	1.419	1.406	1.320	4.570
202A	3018.	202	1.75	1.160	1.425	1.417	1.406	1.370	4.560
202A	3019.	202	1.74	1.159	1.420	1.408	1.397	1.480	4.560
202A	3022.	202	1.67	1.135	1.107	1.405	1.399	1.480	4.560
202A	3024.	202	1.83	1.138	1.090	1.407	1.400	1.490	4.560
202A	3025.	202	1.80	1.128	1.164	1.409	1.402	1.400	4.560
202A	3026.	202	1.95	1.175	1.149	1.413	1.406	1.300	4.570
202A	3028.	202	1.85	1.161	1.139	1.400	1.394	1.300	4.580
202A	3030.	202	1.79	1.139	1.111	1.413	1.407	1.260	4.590
202A	3031.	202	1.77	1.134	1.136	1.413	1.407	1.150	4.590
202A	3032.	202	1.84	1.155	1.121	1.413	1.406	1.990	4.600
202A	3034.	202	1.92	1.171	1.120	1.411	1.405	1.900	4.620
202A	3035.	202	1.94	1.177	1.166	1.417	1.410	1.720	4.630
202A	3037.	202	1.96	1.178	1.130	1.421	1.415	1.650	4.640
202A	3038.	202	2.00	1.185	1.128	1.420	1.413	1.570	4.650
202A	3039.	202	2.10	1.198	1.126	1.417	1.411	1.410	4.660
202A	3040.	202	2.25	1.216	1.207	1.417	1.411		

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ORIGINAL PAGE IS
 ON FLOOR Q1

DATE OF RUN	15 08/27/76	AVE-DIS	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AHO	AHI
PACK	DAY	HIGH-DIS						
202A	3043.	1.233	1.224	1.219	1.426	1.403	.830	4.720
202A	3044.	1.259	1.254	1.251	1.427	1.399	.490	4.750
202A	3185.	1.187	1.162	1.132	1.419	1.385	.492	4.752
202A	3186.	1.172	1.149	1.133	1.423	1.389	.820	4.788
202A	3187.	1.154	1.142	1.124	1.449	1.392	1.066	4.696
202A	3189.	1.160	1.144	1.115	1.445	1.397	1.394	4.655
202A	3190.	1.162	1.143	1.117	1.422	1.473	1.558	4.649
202A	3191.	1.163	1.149	1.122	1.438	1.410	1.640	4.638
202A	3193.	1.165	1.151	1.122	1.431	1.424	1.804	4.624
202A	3194.	1.167	1.153	1.126	1.431	1.424	1.886	4.600
202A	3196.	1.176	1.166	1.155	1.453	1.412	2.050	4.598
202A	3197.	1.173	1.161	1.146	1.459	1.416	2.132	4.590
202A	3198.	1.170	1.153	1.135	1.444	1.414	2.214	4.584
202A	3201.	1.169	1.149	1.129	1.438	1.412	2.296	4.580
202A	3202.	1.166	1.139	1.12	1.437	1.423	2.380	4.566
202A	3203.	1.167	1.136	1.107	1.436	1.411	2.378	4.568
202A	3204.	1.165	1.124	1.088	1.433	1.419	2.460	4.560
202A	3207.	1.175	1.120	1.089	1.424	1.413	2.460	4.559
202A	3208.	1.176	1.124	1.098	1.424	1.413	2.378	4.566
202A	3209.	1.174	1.119	1.091	1.426	1.415	2.378	4.568
202A	3210.	1.177	1.130	1.105	1.424	1.413	2.296	4.576
202A	3213.	1.178	1.136	1.111	1.427	1.416	2.216	4.584
202A	3214.	1.182	1.145	1.122	1.427	1.410	2.132	4.600
202A	3216.	1.189	1.166	1.150	1.430	1.419	1.968	4.614
202A	3217.	1.193	1.172	1.159	1.434	1.416	1.887	4.616
202A	3218.	1.195	1.177	1.166	1.434	1.422	1.804	4.624
202A	3219.	1.198	1.183	1.173	1.431	1.416	1.722	4.632
202A	3220.	1.201	1.187	1.178	1.431	1.414	1.640	4.640
202A	3221.	1.203	1.191	1.183	1.433	1.415	1.558	4.650
202A	3222.	1.210	1.200	1.194	1.437	1.417	1.390	4.670
202A	3223.	1.215	1.206	1.201	1.446	1.424	1.230	4.730
202A	3226.	1.258	1.252	1.247	1.454	1.431	.490	4.790
1	.01356	1.3000	53.00000	.58000	133.30000			

*** OUT OF RANGE ARGUMENT TO IFIX

2	.00000	.00000	9999.00000	15.00000
3	.00763	1.60000	119.60000	160.60000
4	.08475	5.50000	-.10000	53.53000

ORIGINAL PAGE IS
OF POOR QUALITY

3. Pack 203A, 5-cells

a. Cell information: (Same as Pack 201A, Section V.B.1.).

b. Parameters:

Depth of Discharge (%)	40	Discharge Current (amps)	2.0
Charge Control	CC	Temperature (°C)	0
Charge Current (amps)	.20	Float Current (amps)	.20

c. Capacity Checks: (Discharge to .50 volts any cell or to a average voltage of 1.00 volts per cell, whichever occurs first.)

	Cell <u>1</u>	Cell <u>2</u>	Cell <u>3</u>	Cell <u>4</u>	Cell <u>5</u>	ah <u>out</u>
Shadow 11	*					6.60
Shadow 12		.720	1.173	.916	1.172	5.25
Shadow 13		.728	1.165	.948	1.142	5.08
Shadow 14		.801	1.167	.925	1.086	4.83
Shadow 15		.822	1.163	.944	1.072	4.50
Shadow 16		.833	1.147	.951	1.046	4.53
Shadow 17		.841	1.156	.930	1.045	4.20

*--Removed for analysis prior to shadow 8

d. Test results during Eclipse Seasons: (Figures 28 to 33)

(1) End of Discharge Voltages: The reconditioning effect, due to the capacity check, is very evident for each shadow period.

(2) End of Charge Voltages: There is a wide divergence in these voltages throughout the shadow periods although it is less during the middle portion of the periods.

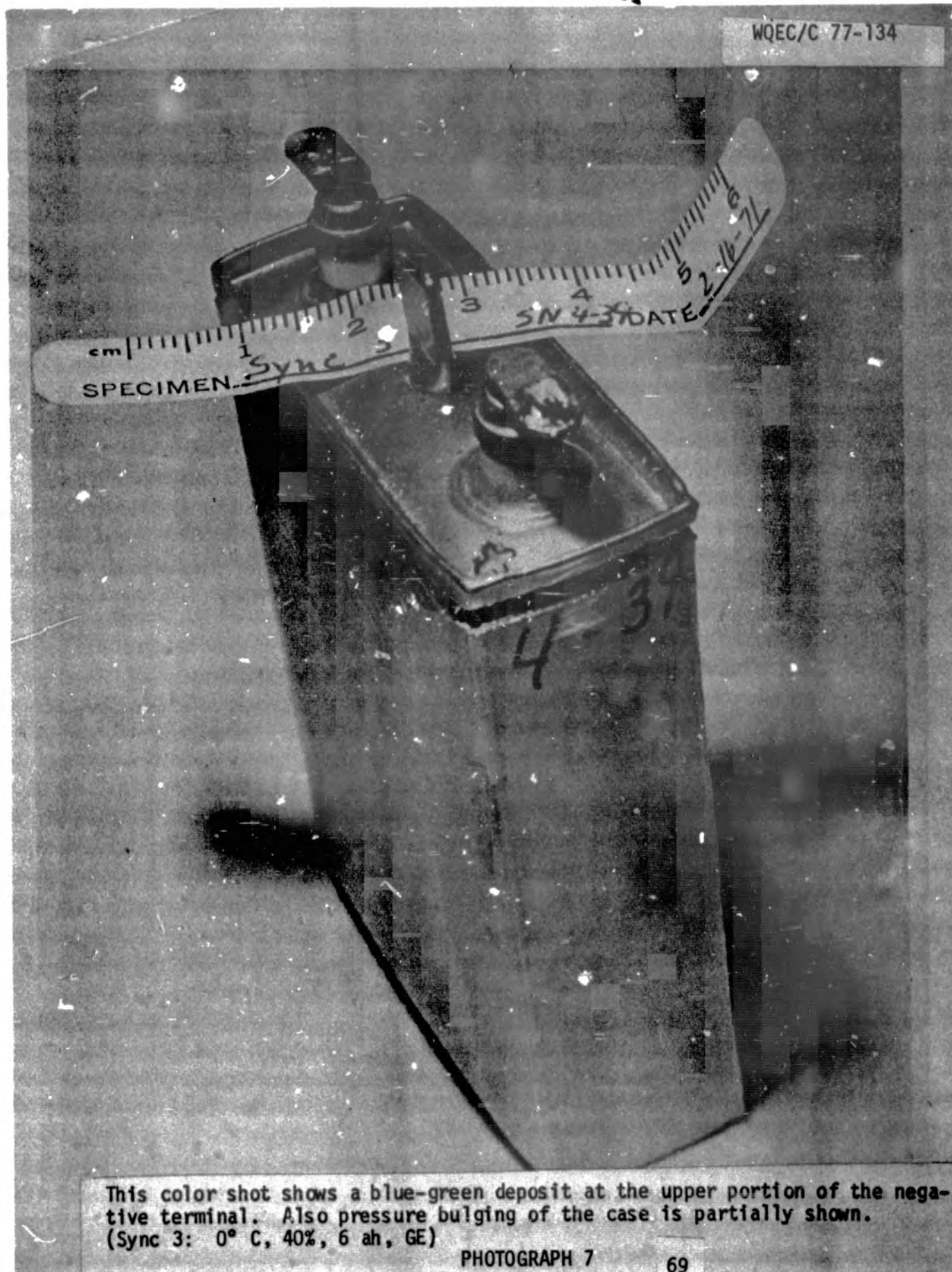
(3) Cell 1 was removed for analysis prior to eclipse season 8.

e. Performance during Sun Periods: The pack began test with a sun period and has now completed 18 periods. Following is a listing of the high, average and low cell voltages at the start and end of sun periods 11 through 18.

Sun Periods								
Voltages**	11		12		13		14	
	Start	End	Start	End	Start	End	Start	End
	High	1.520(4)	1.549(4)	1.549(2)	1.572(4)	1.563(4)	1.561(4)	1.586(4)
	Average	1.506	1.501(1)	1.536	1.494	1.532	1.545	1.513
Voltages	15		16		17		18	
	Start	End	Start	End	Start	End	Start	End
	High	1.568(4)	1.575(4)	1.569(4)	1.591(4)	1.581(4)	1.559(4)	1.602(4)
	Average	1.547	1.466	1.527	1.563	1.464	1.523	1.498
Low	1.490(5)	1.412(3)	1.524(3)	1.432(4)	1.466(3)	1.425(5)	1.505(3)	1.477(2)
	1.518(3)	1.422(3)	1.433(3)	1.449(3)	1.516(3)	1.395(2)	1.452(3)	1.444(2)

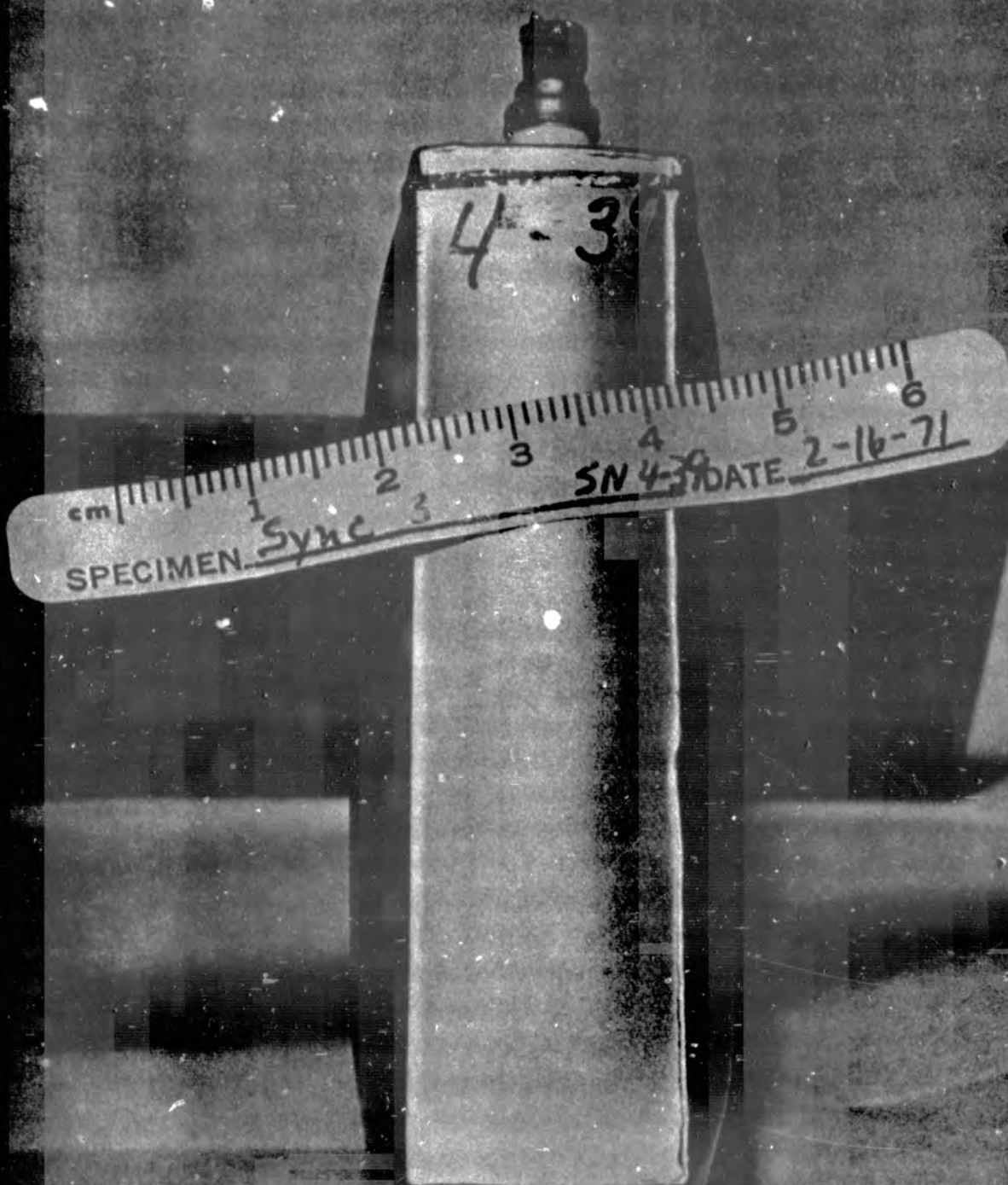
**--() indicates which cell

f. Cell Analysis: Following are the photographs showing the visual analysis of cell 1 which completed 7 eclipse seasons.



This color shot shows a blue-green deposit at the upper portion of the negative terminal. Also pressure bulging of the case is partially shown.
(Sync 3: 0° C, 40%, 6 ah, GE)

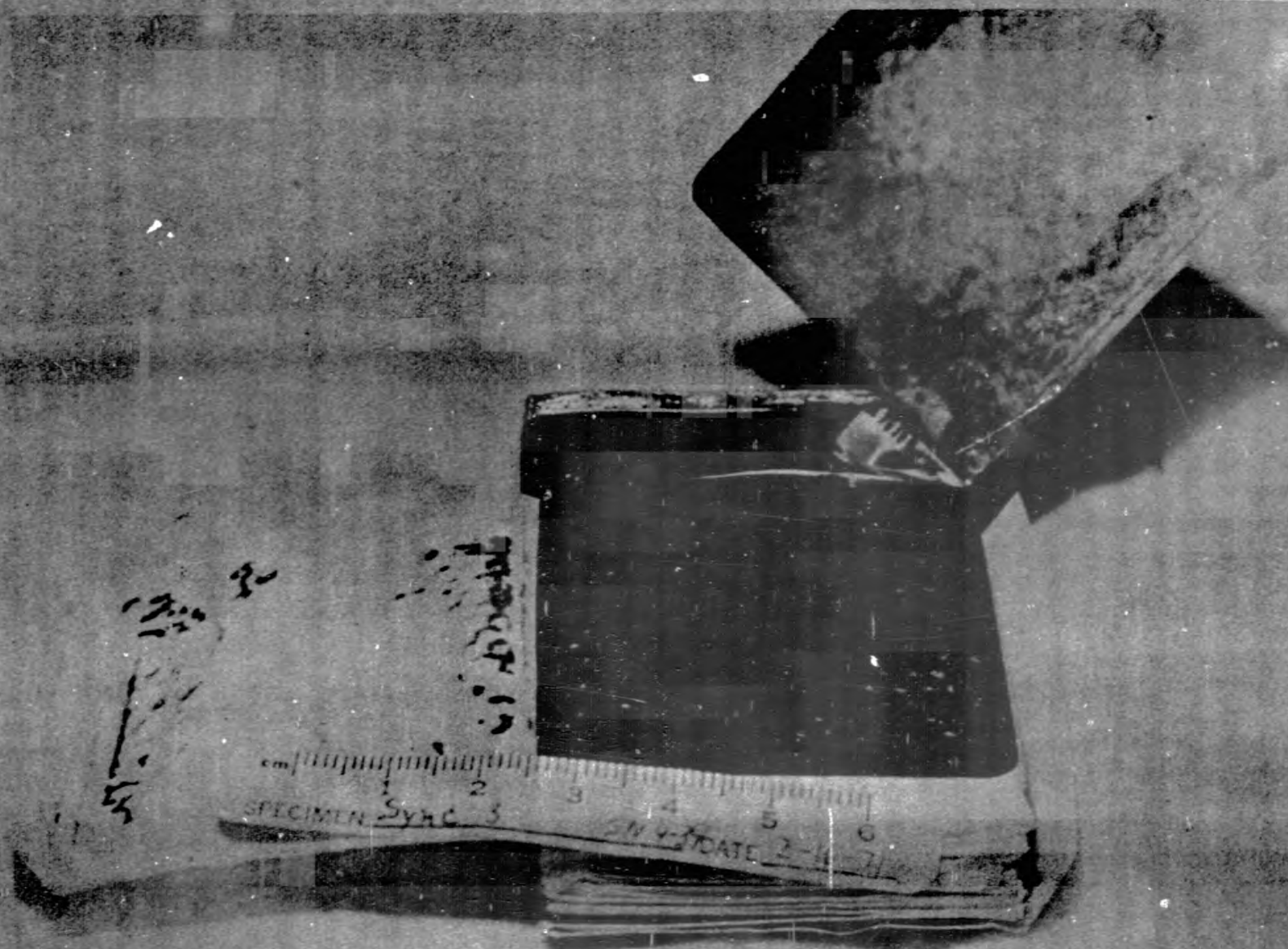
ORIGINAL PAGE 18
POOR QUALITY



This picture shows pressure distortion of cell case.
(Sync 3: 0° C, 40%, 6 ah, GE)

PHOTOGRAPH 8

WQEC/C 77-134



ORIGINAL PAGE IS
OF POOR QUALITY

Extreme blistering of the positive plate and cell dryness are illustrated here. Migration is heavy at areas of blistering. (Sync 3: 0° C, 40%, 6 ah, GE)

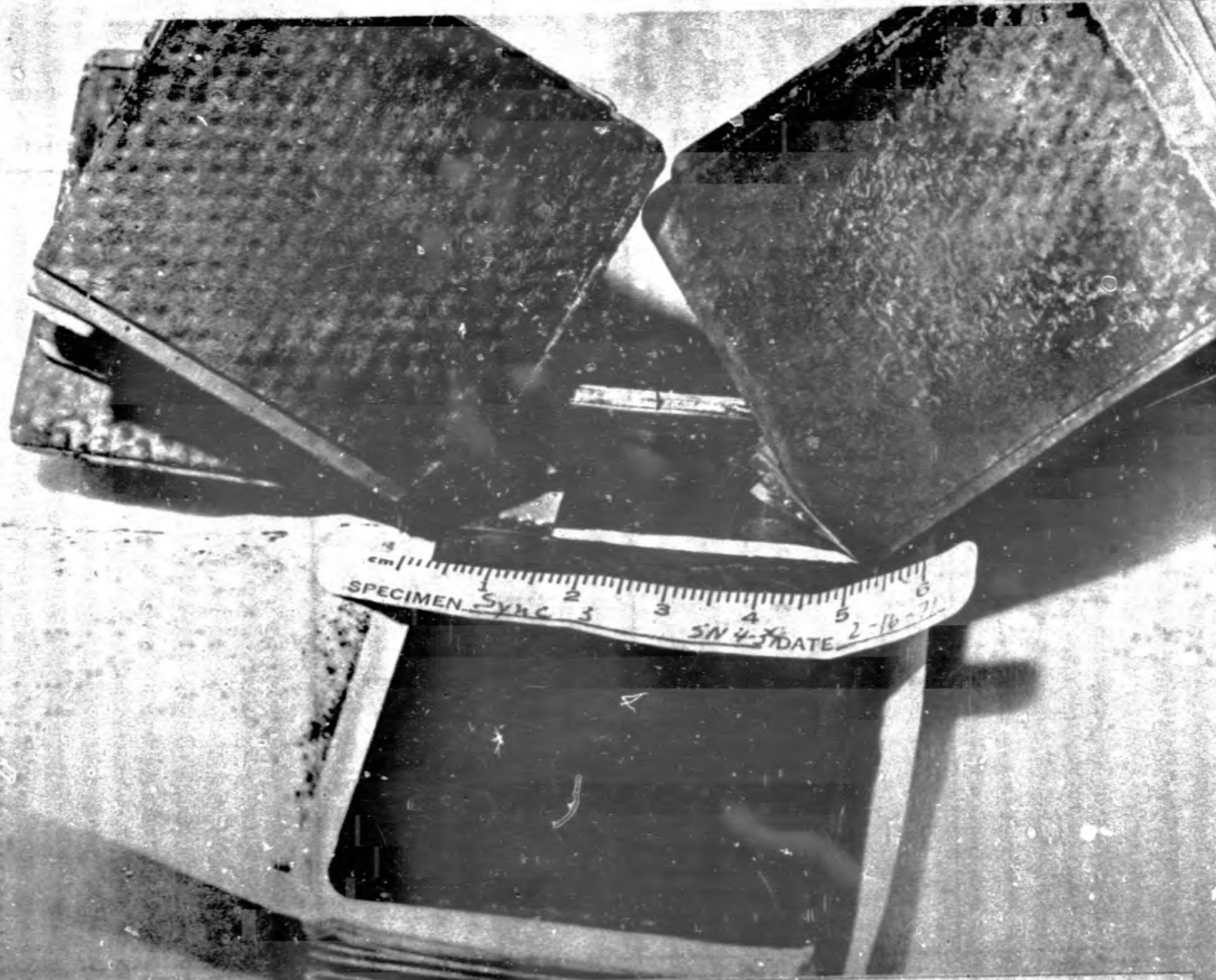
PHOTOGRAPH 9



This illustrates dryness of separator. Heaviest migration corresponds to the more moist sections of the plate (dark area). (SYNC 3: 0° C, 40%, 6 ah, GE)

PHOTOGRAPH 10

WQEC/C 77-134



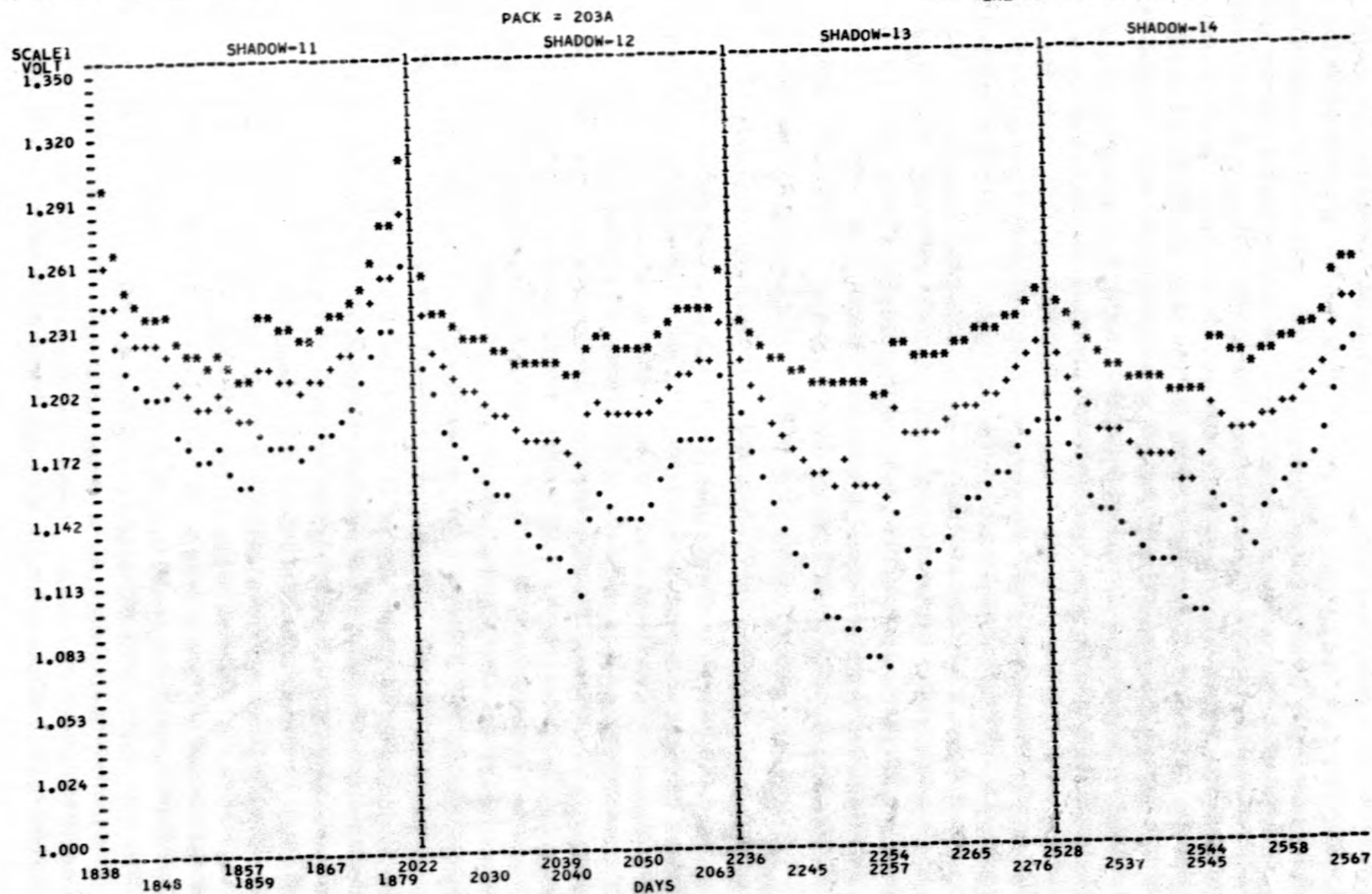
Pictured here is a "ridge blister" across the top of the positive plate, above the identification sticker. (Sync 3: 0° L, 40%, 6 ah, GE)

PHOTOGRAPH 11

KEY
 * HIGH END DISCHARGE VOLTAGE
 + AVE END DISCHARGE VOLTAGE
 . LOW END DISCHARGE VOLTAGE

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 40 WQEC/C 77-134
 TEMPERATURE 00
 AMPERE RATE 06
 SERIAL 4-39,6-8,6-23,11-34,11-36
 GENERAL ELECTRIC CELLS



NOTE: Cell 1 removed for analysis prior to Shadow 8.

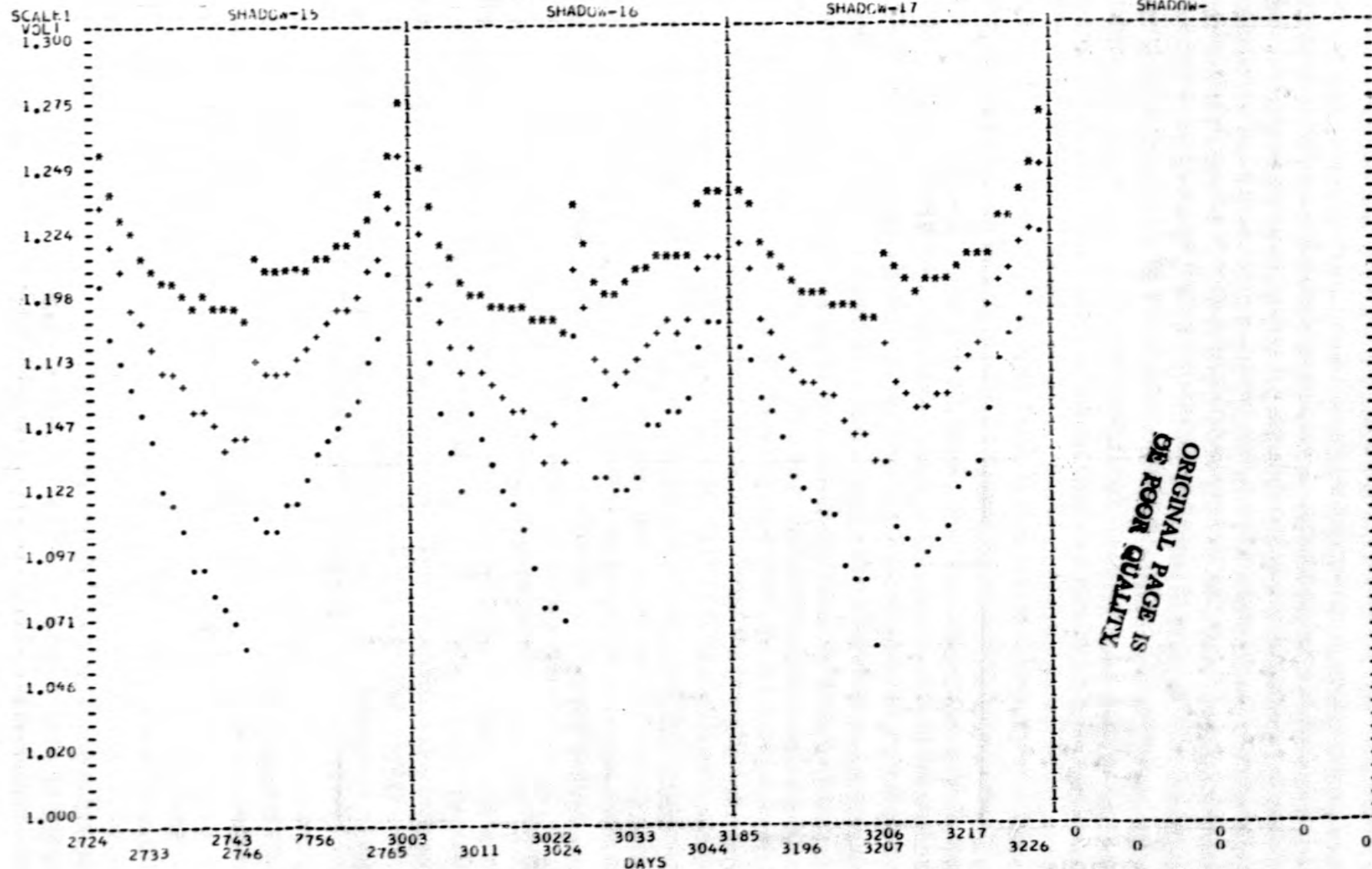
FIGURE 28

KEY
 * HIGH END DISCHARGE VOLTAGE
 + AVE END DISCHARGE VOLTAGE
 . LOW END DISCHARGE VOLTAGE

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 40 WQEC/C 77-134
 TEMPERATURE 00
 AMPERE RATE 06
 SERIAL 4-39,6-8,6-23,11-34,11-36
 GENERAL ELECTRIC CF115

PACK = 203A



NOTE: Cell 1 removed for analysis prior to Shadow 8.

FIGURE 29

KEY
 * HIGH EOC
 + AVE EOC
 . LOW EOC

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 203A

DEPTH DISCHARGE 40
 TEMPERATURE 00 WQEC/C 77-134
 AMPERE RATE 06
 SERIAL 4-39,6-8,6-23,11-34,11-36
 GENERAL ELECTRIC CELLS

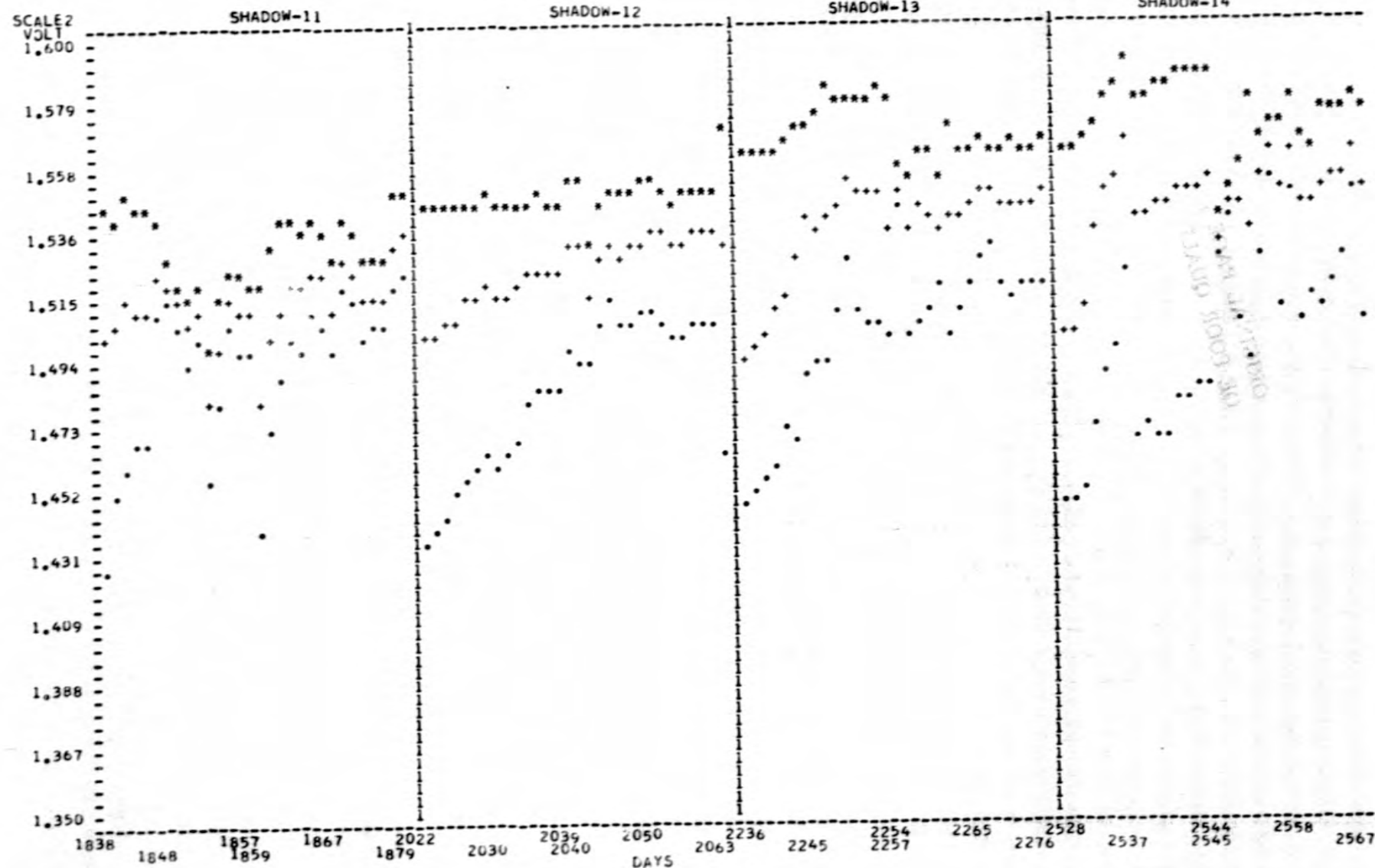


FIGURE 30

NOTE: Cell 1 removed for analysis prior to Shadow 8.

KEY
 * HIGH EOC
 + AVE EOC
 . LOW EOC

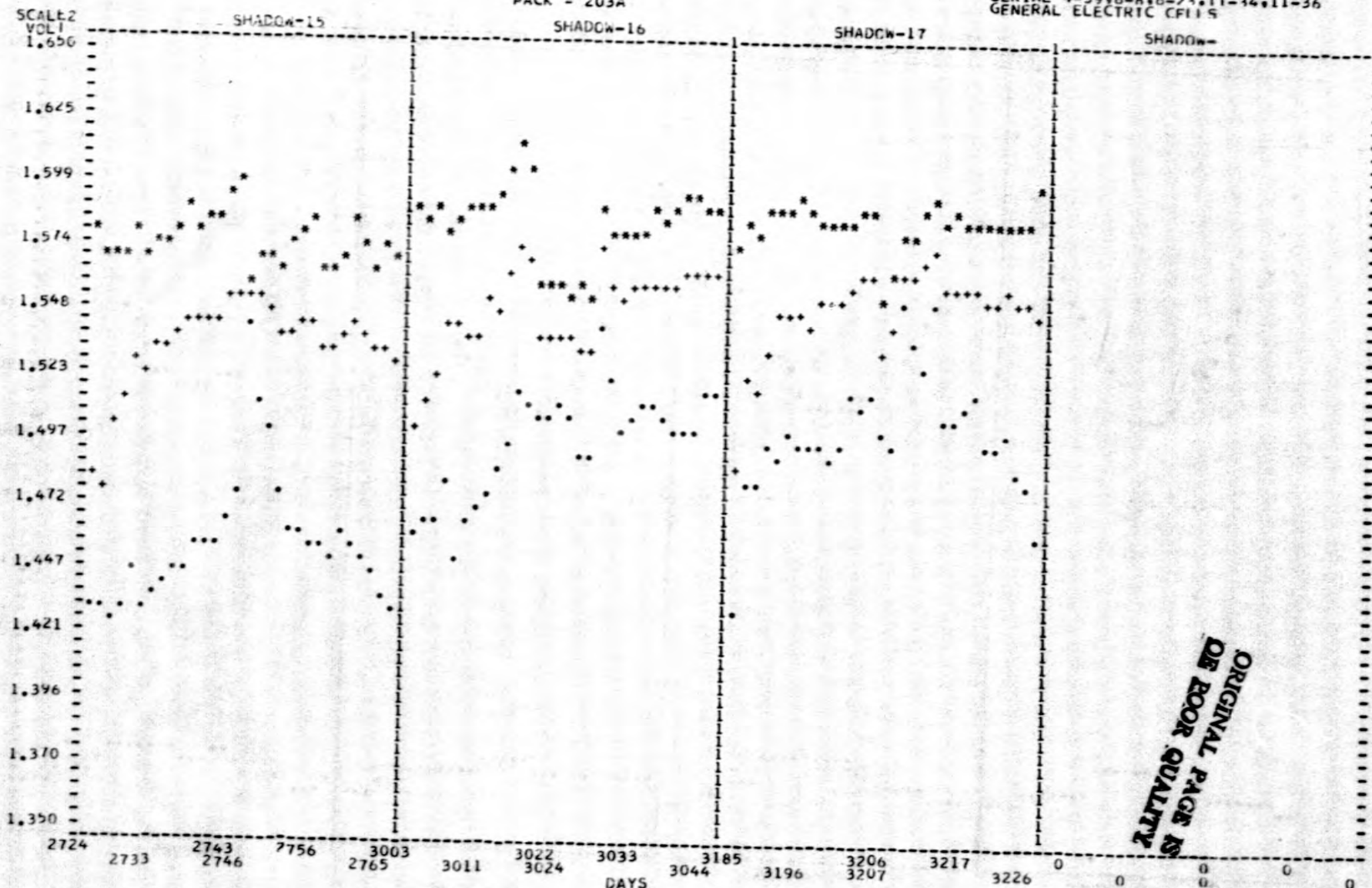
SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 40 /
 TEMPERATURE 00
 AMPERE RATE 06
 SERIAL 4-39,6-8,6-23,11-34,11-36
 GENERAL ELECTRIC CELLS

WQEC/C 77-134

PACK = 203A

SCALE 2
 VOLTS
 1.650



NOTE: Cell 1 removed for analysis prior to Shadow 8.

FIGURE 31
 77

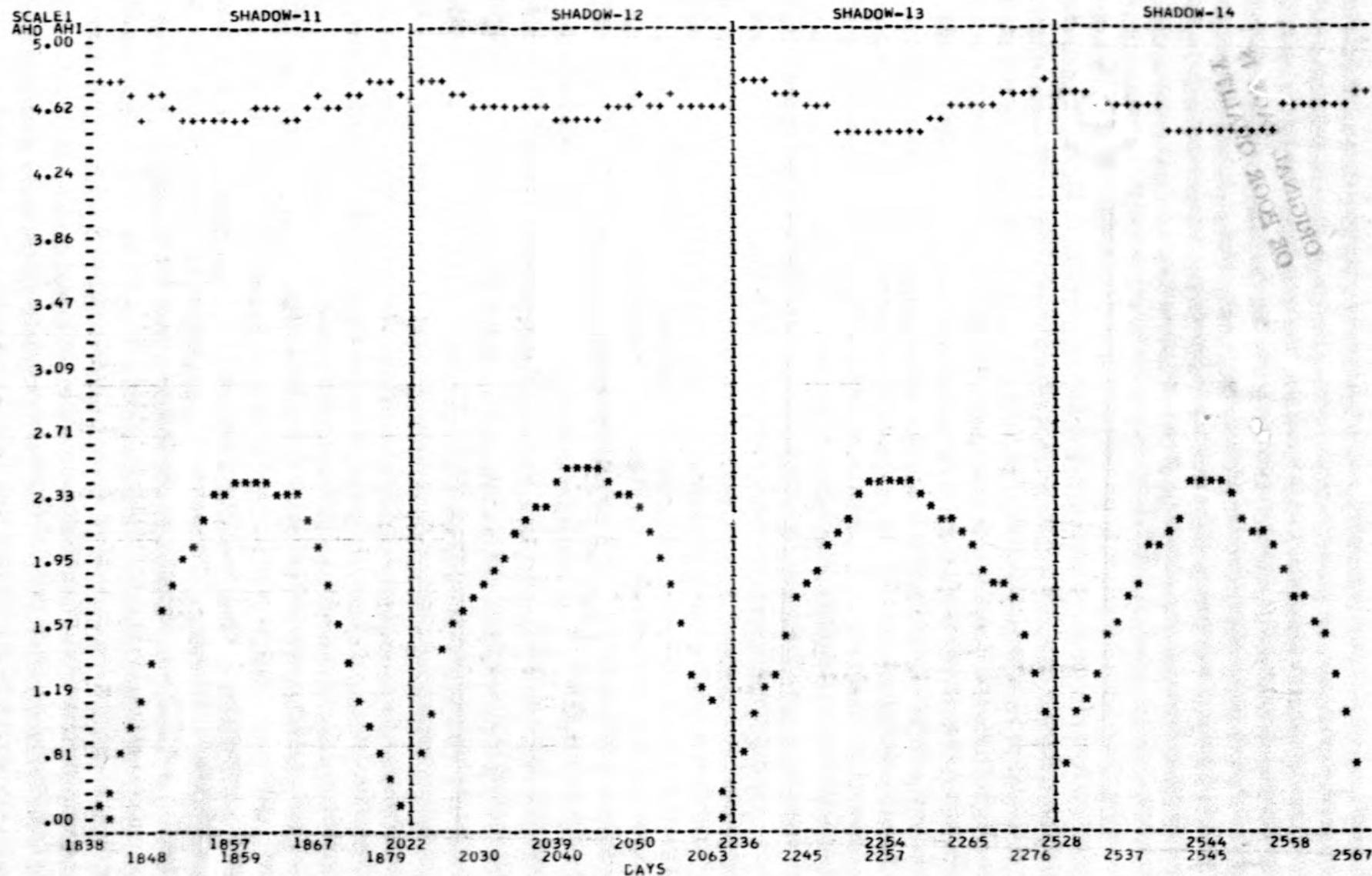
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 OF POOR QUALITY

KEY
 * AHO
 + AHI-TOTAL

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 40
 TEMPERATURE 00 WQEC/C 77-134
 AMPERE RATE 06
 SERIAL 4-39,6-8,6-23,11-34,11-36
 GENERAL ELECTRIC CELLS

PACK = 203A



NOTE: Cell 1 removed for analysis prior to Shadow 8.

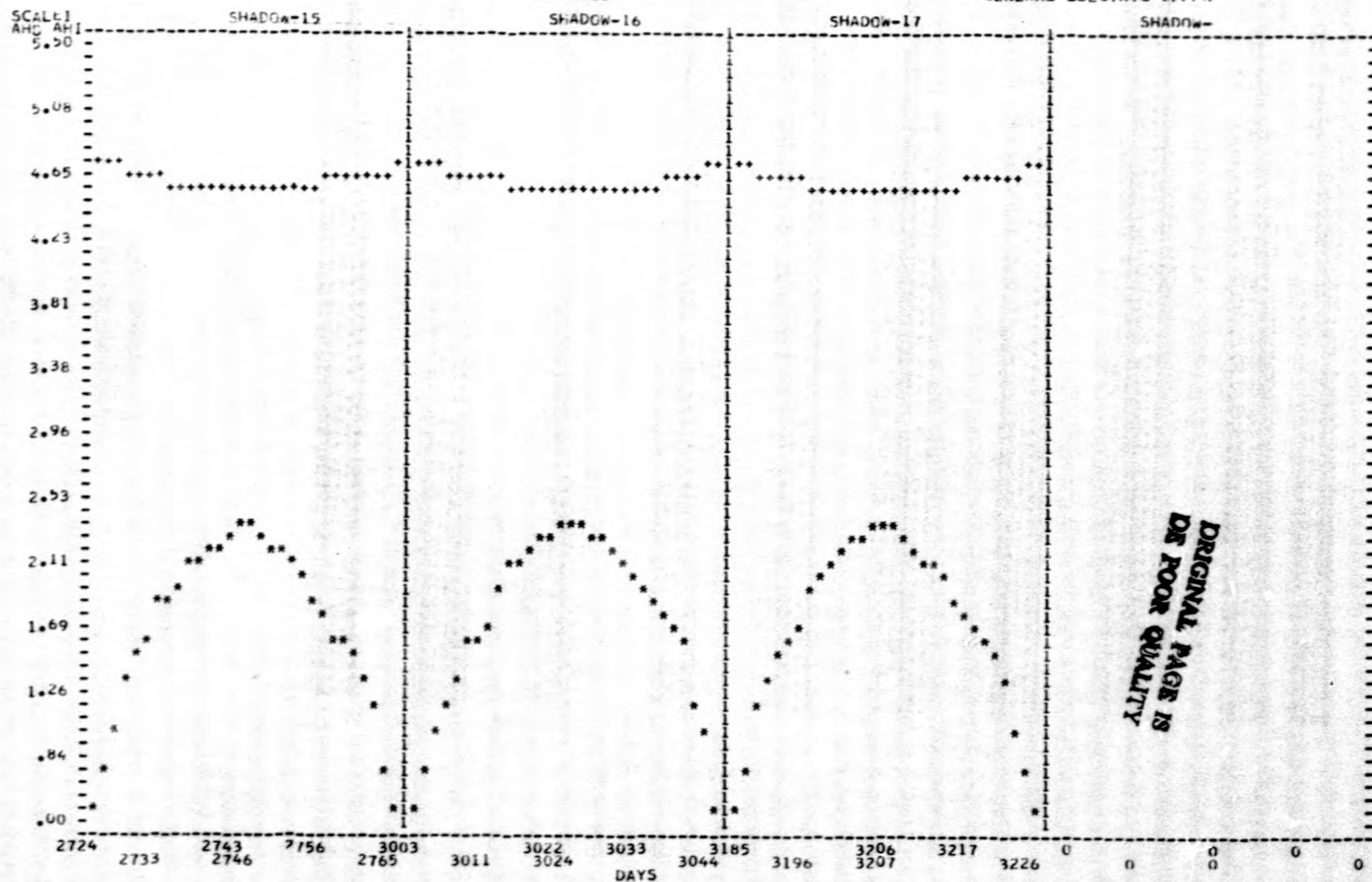
FIGURE 32

KEY
 * AHU
 + AHU-TOTAL

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 203A

DEPTH DISCHARGE 40
 TEMPERATURE 00
 AMPERE RATE 06
 SERIAL 4-39-6-A-6-23.11-34.11-36
 GENERAL ELECTRIC CF115
 WQEC/C 77-134



NOTE: Cell 1 removed for analysis prior to Shadow 8.

FIGURE 33

PACK	DAY	HIGH-DIS	SHADOW	AVE-DIS	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AHO	AHI
PACK	= 203A			11 12 13 14						
203A	1836.	1.241	1.547	1.502	1.428	.530	4.751			
203A	1840.	1.227	1.542	1.506	1.451	.598	4.740			
203A	1842.	1.213	1.548	1.514	1.460	.598	4.737			
203A	1843.	1.209	1.543	1.512	1.469	.598	4.730			
203A	1844.	1.203	1.541	1.512	1.469	.972	4.720			
203A	1846.	1.200	1.530	1.512	1.469	1.100	4.552			
203A	1848.	1.182	1.521	1.514	1.469	1.376	4.695			
203A	1850.	1.179	1.517	1.507	1.469	1.615	4.714			
203A	1851.	1.171	1.520	1.511	1.469	1.792	4.603			
203A	1852.	1.165	1.499	1.500	1.469	1.915	4.536			
203A	1853.	1.161	1.522	1.511	1.469	2.009	4.526			
203A	1854.	1.159	1.523	1.514	1.469	2.200	4.524			
203A	1855.	1.155	1.521	1.510	1.469	2.320	4.520			
203A	1856.	1.150	1.521	1.510	1.469	2.348	4.507			
203A	1857.	1.149	1.521	1.510	1.469	2.400	4.513			
203A	1859.	1.141	1.532	1.501	1.469	2.400	4.519			
203A	1860.	1.137	1.539	1.511	1.469	2.400	4.586			
203A	1861.	1.135	1.541	1.519	1.469	2.400	4.621			
203A	1862.	1.130	1.537	1.519	1.469	2.344	4.600			
203A	1863.	1.128	1.540	1.522	1.469	2.326	4.547			
203A	1864.	1.127	1.535	1.522	1.469	2.311	4.519			
203A	1865.	1.126	1.535	1.522	1.469	2.149	4.591			
203A	1866.	1.125	1.535	1.522	1.469	1.988	4.708			
203A	1867.	1.124	1.535	1.522	1.469	1.794	4.599			
203A	1869.	1.122	1.536	1.522	1.469	1.600	4.589			
203A	1871.	1.121	1.536	1.522	1.469	1.355	4.658			
203A	1873.	1.120	1.536	1.522	1.469	1.101	4.659			
203A	1875.	1.119	1.536	1.522	1.469	.920	4.735			
203A	1876.	1.118	1.536	1.522	1.469	.830	4.724			
203A	1877.	1.117	1.536	1.522	1.469	.660	4.754			
203A	1879.	1.116	1.536	1.522	1.469	.530	4.714			
203A	1883.	1.115	1.536	1.522	1.469	.824	4.760			
203A	1884.	1.114	1.536	1.522	1.469	.010	4.760			
203A	1885.	1.113	1.536	1.522	1.469	1.390	4.700			
203A	1886.	1.112	1.536	1.522	1.469	1.560	4.700			
203A	1887.	1.111	1.536	1.522	1.469	1.640	4.650			
203A	1888.	1.110	1.536	1.522	1.469	1.720	4.650			
203A	1889.	1.109	1.536	1.522	1.469	1.800	4.650			
203A	1890.	1.108	1.536	1.522	1.469	1.880	4.650			
203A	1891.	1.107	1.536	1.522	1.469	1.970	4.600			
203A	1892.	1.106	1.536	1.522	1.469	2.130	4.600			
203A	1893.	1.105	1.536	1.522	1.469	2.210	4.600			
203A	1894.	1.104	1.536	1.522	1.469	2.250	4.600			
203A	1895.	1.103	1.536	1.522	1.469	2.290	4.600			
203A	1896.	1.102	1.536	1.522	1.469	2.380	4.560			
203A	1897.	1.101	1.536	1.522	1.469	2.460	4.560			
203A	1898.	1.100	1.536	1.522	1.469	2.460	4.560			
203A	1899.	1.099	1.536	1.522	1.469	2.460	4.560			
203A	1900.	1.098	1.536	1.522	1.469	2.460	4.560			
203A	1901.	1.097	1.536	1.522	1.469	2.460	4.560			
203A	1902.	1.096	1.536	1.522	1.469	2.460	4.560			
203A	1903.	1.095	1.536	1.522	1.469	2.460	4.560			
203A	1904.	1.094	1.536	1.522	1.469	2.460	4.560			
203A	1905.	1.093	1.536	1.522	1.469	2.460	4.560			
203A	1906.	1.092	1.536	1.522	1.469	2.460	4.560			
203A	1907.	1.091	1.536	1.522	1.469	2.460	4.560			
203A	1908.	1.090	1.536	1.522	1.469	2.460	4.560			
203A	1909.	1.089	1.536	1.522	1.469	2.460	4.560			
203A	1910.	1.088	1.536	1.522	1.469	2.460	4.560			
203A	1911.	1.087	1.536	1.522	1.469	2.460	4.560			
203A	1912.	1.086	1.536	1.522	1.469	2.460	4.560			
203A	1913.	1.085	1.536	1.522	1.469	2.460	4.560			
203A	1914.	1.084	1.536	1.522	1.469	2.460	4.560			
203A	1915.	1.083	1.536	1.522	1.469	2.460	4.560			
203A	1916.	1.082	1.536	1.522	1.469	2.460	4.560			
203A	1917.	1.081	1.536	1.522	1.469	2.460	4.560			
203A	1918.	1.080	1.536	1.522	1.469	2.460	4.560			
203A	1919.	1.079	1.536	1.522	1.469	2.460	4.560			
203A	1920.	1.078	1.536	1.522	1.469	2.460	4.560			
203A	1921.	1.077	1.536	1.522	1.469	2.460	4.560			
203A	1922.	1.076	1.536	1.522	1.469	2.460	4.560			
203A	1923.	1.075	1.536	1.522	1.469	2.460	4.560			
203A	1924.	1.074	1.536	1.522	1.469	2.460	4.560			
203A	1925.	1.073	1.536	1.522	1.469	2.460	4.560			
203A	1926.	1.072	1.536	1.522	1.469	2.460	4.560			
203A	1927.	1.071	1.536	1.522	1.469	2.460	4.560			
203A	1928.	1.070	1.536	1.522	1.469	2.460	4.560			
203A	1929.	1.069	1.536	1.522	1.469	2.460	4.560			
203A	1930.	1.068	1.536	1.522	1.469	2.460	4.560			
203A	1931.	1.067	1.536	1.522	1.469	2.460	4.560			
203A	1932.	1.066	1.536	1.522	1.469	2.460	4.560			
203A	1933.	1.065	1.536	1.522	1.469	2.460	4.560			
203A	1934.	1.064	1.536	1.522	1.469	2.460	4.560			
203A	1935.	1.063	1.536	1.522	1.469	2.460	4.560			
203A	1936.	1.062	1.536	1.522	1.469	2.460	4.560			
203A	1937.	1.061	1.536	1.522	1.469	2.460	4.560			
203A	1938.	1.060	1.536	1.522	1.469	2.460	4.560			

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PACK	DAY	HIGH-DIS	AVE-DIS	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AHO	AHI
2033A	20	1.211	1.211	1.179	1.536	1.536	1.507	1.100	4.600
2033A	20	1.232	1.232	1.206	1.532	1.532	1.466	1.600	4.600
2033A	20	1.214	1.214	1.189	1.495	1.495	1.448	1.800	4.600
2033A	20	1.201	1.201	1.174	1.496	1.496	1.450	1.000	4.760
2033A	20	1.194	1.194	1.163	1.502	1.502	1.455	1.200	4.760
2033A	20	1.186	1.186	1.150	1.512	1.512	1.460	1.300	4.700
2033A	20	1.179	1.179	1.137	1.517	1.517	1.473	1.500	4.700
2033A	20	1.172	1.172	1.126	1.530	1.530	1.467	1.700	4.700
2033A	20	1.169	1.169	1.120	1.541	1.541	1.491	1.800	4.650
2033A	20	1.163	1.163	1.106	1.538	1.538	1.493	1.900	4.600
2033A	20	1.159	1.159	1.097	1.539	1.539	1.494	1.000	4.600
2033A	20	1.157	1.157	1.092	1.545	1.545	1.510	1.100	4.500
2033A	20	1.166	1.166	1.090	1.553	1.553	1.526	1.200	4.500
2033A	20	1.155	1.155	1.087	1.547	1.547	1.509	1.300	4.500
2033A	20	1.153	1.153	1.080	1.548	1.548	1.507	1.400	4.500
2033A	20	1.152	1.152	1.078	1.549	1.549	1.506	1.500	4.500
2033A	20	1.144	1.144	1.072	1.533	1.533	1.501	1.600	4.500
2033A	20	1.140	1.140	1.144	1.536	1.536	1.544	1.700	4.500
2033A	20	1.180	1.180	1.124	1.544	1.544	1.501	1.800	4.500
2033A	20	1.176	1.176	1.115	1.561	1.561	1.505	1.900	4.500
2033A	20	1.178	1.178	1.119	1.560	1.560	1.510	1.000	4.500
2033A	20	1.179	1.179	1.126	1.553	1.553	1.518	1.100	4.500
2033A	20	1.181	1.181	1.129	1.571	1.571	1.504	1.200	4.600
2033A	20	1.188	1.188	1.140	1.561	1.561	1.509	1.300	4.600
2033A	20	1.191	1.191	1.147	1.563	1.563	1.518	1.400	4.600
2033A	20	1.192	1.192	1.149	1.564	1.564	1.530	1.500	4.600
2033A	20	1.194	1.194	1.153	1.561	1.561	1.532	1.600	4.650
2033A	20	1.197	1.197	1.158	1.561	1.561	1.519	1.700	4.700
2033A	20	1.200	1.200	1.163	1.564	1.564	1.516	1.800	4.700
2033A	20	1.206	1.206	1.172	1.563	1.563	1.520	1.900	4.700
2033A	20	1.211	1.211	1.176	1.563	1.563	1.520	1.000	4.700
2033A	20	1.217	1.217	1.183	1.568	1.568	1.518	1.100	4.800
2033A	20	1.216	1.216	1.184	1.560	1.560	1.447	1.200	4.700
2033A	20	1.204	1.204	1.173	1.560	1.560	1.447	1.300	4.700
2033A	20	1.198	1.198	1.167	1.566	1.566	1.451	1.400	4.700
2033A	20	1.187	1.187	1.150	1.571	1.571	1.471	1.500	4.600
2033A	20	1.180	1.180	1.142	1.580	1.580	1.491	1.600	4.600
2033A	20	1.178	1.178	1.140	1.585	1.585	1.499	1.700	4.600
2033A	20	1.175	1.175	1.139	1.593	1.593	1.522	1.800	4.600
2033A	20	1.172	1.172	1.132	1.579	1.579	1.470	1.900	4.600
2033A	20	1.167	1.167	1.127	1.580	1.580	1.471	1.000	4.610
2033A	20	1.169	1.169	1.120	1.581	1.581	1.470	1.100	4.500
2033A	20	1.166	1.166	1.118	1.581	1.581	1.467	1.200	4.500
2033A	20	1.164	1.164	1.116	1.587	1.587	1.483	1.300	4.500
2033A	20	1.164	1.164	1.098	1.588	1.588	1.482	1.400	4.500
2033A	20	1.164	1.164	1.094	1.589	1.589	1.484	1.500	4.500
2033A	20	1.164	1.164	1.092	1.589	1.589	1.485	1.600	4.500
2033A	20	1.164	1.164	1.149	1.540	1.540	1.528	1.700	4.500
2033A	20	1.188	1.188	1.141	1.545	1.545	1.541	1.800	4.500
2033A	20	1.189	1.189	1.134	1.549	1.549	1.541	1.900	4.500
2033A	20	1.180	1.180	1.130	1.558	1.558	1.506	1.000	4.500
2033A	20	1.179	1.179	1.130	1.579	1.579	1.495	1.100	4.500
2033A	20	1.177	1.177	1.126	1.568	1.568	1.530	1.200	4.500
2033A	20	1.182	1.182	1.141	1.571	1.571	1.554	1.300	4.500
2033A	20	1.184	1.184	1.146	1.569	1.569	1.509	1.400	4.600
2033A	20	1.191	1.191	1.154	1.577	1.577	1.548	1.500	4.600
2033A	20	1.193	1.193	1.158	1.565	1.565	1.507	1.600	4.600
2033A	20	1.197	1.197	1.163	1.562	1.562	1.516	1.700	4.600
2033A	20	1.200	1.200	1.168	1.576	1.576	1.512	1.800	4.600
2033A	20	1.208	1.208	1.178	1.574	1.574	1.520	1.900	4.600

ORIGINAL PAGE IS
OF POOR QUALITY

PACK	DAY	HIGH-DIS	AVE-DIS	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AHO	AHI
203A	2565.	1.247	1.225	1.198	1.573	1.554	1.528	1.000	4.600
203A	2566.	1.257	1.235	1.212	1.578	1.562	1.548	.700	4.700
203A	2567.	1.258	1.240	1.220	1.574	1.548	1.507	.400	4.700
1	.00593	1.35000	102.20000	1.07200	135.70000				

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*** OUT OF RANGE ARGUMENT TO IFIX

2	.00000	.00000*****	9999.00000	15.00000
3	.00424	1.60000	137.80000	164.30000
4	.07627	5.00000	3.50000	48.50000

DE LOON 05-17-77
DISTRICT 1-705 B

DATE OF RUN IS 08/27/76
 DAY HIGH-DIS
 BACK = 2034 SHADOW =

AVE-DIS
 15 16 17

LOW-DIS

HIGH-CHAR

AVE-CHAR

LOW-CHAR

AHO

AHI

WQEC/C 77-134

203A	2724.	1.253	1.234	1.202	1.577	1.480	1.430	4.888	4.756
203A	2725.	1.239	1.217	1.184	1.571	1.478	1.430	4.780	4.720
203A	2726.	1.229	1.208	1.175	1.569	1.504	1.424	1.034	4.696
203A	2728.	1.222	1.195	1.164	1.569	1.510	1.429	1.326	4.670
203A	2729.	1.215	1.187	1.154	1.580	1.527	1.445	1.482	4.640
203A	2731.	1.210	1.179	1.142	1.571	1.525	1.432	1.638	4.620
203A	2733.	1.203	1.169	1.123	1.574	1.531	1.438	1.833	4.616
203A	2734.	1.202	1.166	1.116	1.576	1.534	1.441	1.872	4.600
203A	2735.	1.195	1.162	1.106	1.577	1.537	1.447	1.950	4.584
203A	2737.	1.195	1.154	1.089	1.587	1.542	1.445	2.106	4.584
203A	2738.	1.196	1.154	1.089	1.582	1.544	1.457	2.184	4.576
203A	2739.	1.193	1.148	1.079	1.582	1.545	1.459	2.184	4.532
203A	2740.	1.192	1.140	1.075	1.592	1.551	1.466	2.262	4.572
203A	2741.	1.191	1.144	1.070	1.592	1.554	1.475	2.340	4.560
203A	2743.	1.190	1.140	1.063	1.599	1.552	1.475	2.340	4.560
203A	2746.	1.213	1.174	1.114	1.560	1.553	1.511	2.262	4.568
203A	2747.	1.208	1.169	1.105	1.569	1.548	1.500	2.184	4.570
203A	2749.	1.209	1.170	1.109	1.567	1.537	1.476	2.184	4.576
203A	2750.	1.210	1.170	1.115	1.562	1.538	1.476	2.106	4.586
203A	2752.	1.210	1.173	1.119	1.574	1.538	1.462	2.028	4.590
203A	2753.	1.211	1.176	1.125	1.580	1.541	1.467	1.872	4.608
203A	2755.	1.215	1.183	1.137	1.582	1.541	1.455	1.794	4.616
203A	2756.	1.216	1.186	1.142	1.565	1.534	1.454	1.638	4.632
203A	2758.	1.219	1.191	1.150	1.564	1.533	1.454	1.560	4.640
203A	2759.	1.221	1.194	1.154	1.568	1.539	1.456	1.482	4.660
203A	2760.	1.224	1.198	1.160	1.585	1.542	1.456	1.326	4.665
203A	2761.	1.230	1.206	1.173	1.576	1.539	1.450	1.170	4.670
203A	2762.	1.237	1.214	1.183	1.566	1.533	1.448	1.780	4.680
203A	2764.	1.234	1.235	1.210	1.574	1.532	1.438	1.468	4.750
203A	2765.	1.233	1.233	1.229	1.569	1.527	1.433	1.520	4.750
203A	3003.	1.249	1.223	1.200	1.587	1.503	1.460	1.780	4.720
203A	3004.	1.233	1.203	1.172	1.585	1.510	1.465	1.010	4.700
203A	3005.	1.221	1.188	1.151	1.590	1.520	1.467	1.170	4.680
203A	3006.	1.213	1.179	1.137	1.581	1.543	1.483	1.340	4.650
203A	3007.	1.203	1.169	1.123	1.584	1.541	1.450	1.560	4.640
203A	3009.	1.199	1.175	1.154	1.590	1.537	1.467	1.630	4.620
203A	3010.	1.197	1.170	1.142	1.590	1.540	1.470	1.710	4.620
203A	3011.	1.194	1.163	1.130	1.595	1.551	1.478	1.950	4.620
203A	3014.	1.194	1.156	1.120	1.603	1.550	1.488	2.110	4.580
203A	3016.	1.194	1.154	1.119	1.614	1.561	1.497	2.110	4.580
203A	3017.	1.194	1.151	1.109	1.614	1.568	1.514	2.160	4.570
203A	3019.	1.190	1.141	1.090	1.606	1.568	1.506	2.260	4.560
203A	3020.	1.186	1.135	1.078	1.600	1.567	1.510	2.260	4.570
203A	3021.	1.186	1.146	1.075	1.601	1.538	1.512	2.340	4.560
203A	3022.	1.185	1.131	1.070	1.611	1.537	1.509	2.340	4.560
203A	3024.	1.234	1.210	1.183	1.554	1.533	1.493	2.260	4.580
203A	3025.	1.220	1.194	1.160	1.551	1.532	1.493	2.250	4.580
203A	3027.	1.204	1.173	1.129	1.591	1.571	1.542	2.200	4.580
203A	3028.	1.200	1.169	1.125	1.577	1.559	1.523	2.100	4.580
203A	3029.	1.198	1.164	1.120	1.578	1.556	1.509	2.020	4.540
203A	3030.	1.205	1.168	1.124	1.578	1.556	1.514	1.950	4.610
203A	3032.	1.208	1.171	1.128	1.579	1.557	1.512	1.870	4.600
203A	3033.	1.208	1.180	1.146	1.587	1.559	1.509	1.790	4.620
203A	3034.	1.212	1.186	1.153	1.584	1.557	1.504	1.710	4.620
203A	3035.	1.213	1.185	1.154	1.588	1.558	1.504	1.560	4.640
203A	3036.	1.213	1.185	1.156	1.596	1.562	1.504	1.170	4.680
203A	3038.	1.213	1.188	1.156	1.596	1.561	1.501		
203A	3041.	1.234	1.208	1.179	1.596	1.561	1.501		

ORIGINAL PAGE IS
 OF FOUR QUALITY

DATE OF RUN	IS 08/27/76	AVE-DIS	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AHU	AHI
203A	3042.	1.240	1.216	1.187	1.591	1.562	1.516	4.700
203A	3044.	1.240	1.216	1.187	1.591	1.562	1.516	4.710
203A	3045.	1.241	1.218	1.180	1.573	1.486	1.433	4.754
203A	3186.	1.234	1.208	1.171	1.582	1.524	1.481	4.724
203A	3188.	1.218	1.189	1.158	1.581	1.520	1.481	4.680
203A	3189.	1.212	1.182	1.151	1.589	1.532	1.498	4.664
203A	3190.	1.206	1.174	1.140	1.589	1.548	1.492	4.648
203A	3192.	1.203	1.168	1.129	1.590	1.547	1.504	4.632
203A	3193.	1.200	1.163	1.121	1.593	1.546	1.497	4.624
203A	3196.	1.199	1.162	1.118	1.588	1.546	1.496	4.600
203A	3197.	1.198	1.155	1.114	1.586	1.552	1.495	4.558
203A	3199.	1.195	1.158	1.114	1.586	1.551	1.492	4.554
203A	3200.	1.194	1.146	1.090	1.583	1.551	1.496	4.560
203A	3202.	1.192	1.144	1.088	1.585	1.557	1.517	4.570
203A	3203.	1.189	1.143	1.087	1.591	1.564	1.514	4.568
203A	3204.	1.188	1.132	1.063	1.588	1.564	1.516	4.564
203A	3206.	1.212	1.176	1.132	1.554	1.535	1.501	4.560
203A	3207.	1.207	1.164	1.106	1.563	1.543	1.499	4.560
203A	3209.	1.204	1.160	1.100	1.579	1.566	1.554	4.568
203A	3210.	1.200	1.152	1.093	1.578	1.564	1.537	4.576
203A	3212.	1.204	1.154	1.096	1.588	1.571	1.530	4.586
203A	3213.	1.203	1.156	1.100	1.593	1.573	1.552	4.590
203A	3214.	1.202	1.160	1.108	1.587	1.556	1.506	4.592
203A	3216.	1.210	1.168	1.120	1.585	1.559	1.508	4.608
203A	3217.	1.212	1.172	1.126	1.585	1.557	1.511	4.616
203A	3218.	1.213	1.177	1.134	1.583	1.559	1.516	4.626
203A	3220.	1.215	1.195	1.152	1.582	1.552	1.495	4.640
203A	3221.	1.228	1.203	1.174	1.582	1.552	1.495	4.650
203A	3222.	1.231	1.209	1.185	1.583	1.559	1.500	4.670
203A	3224.	1.239	1.217	1.190	1.585	1.551	1.486	4.690
203A	3225.	1.248	1.225	1.198	1.585	1.552	1.482	4.720
203A	3226.	1.271	1.248	1.222	1.599	1.550	1.461	4.750
1	.00508	1.3000	101.3000	1.06300	132.50000			

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OUT OF RANGE ARGUMENT TO IFIX

0.00000	0.00000	9999.00000	15.00000
0.00508	1.65000	137.40000	166.40000
0.08475	3.50000	-3.32000	52.56000

ORIGINAL PAGE IS
OF POOR QUALITY

4. Pack 204A, 5-cells

a. Cell information: (Same as Pack 201A, Section V.B.1.). This pack was tested at -20°C , with a depth of discharge of 40 percent. The pack failed during the second day of eclipse season 2. The results of this pack were reported in the August 1970 report.

5. Pack 204B, 5-cells

a. Cell information: (Same as Pack 201A, Section V.B.1. except only the first 8 eclipse seasons were reported.)

b. Parameters:

Depth of Discharge (%)	40	Discharge Current (amps)	2.0
Charge Control	CLM	Temperature ($^{\circ}\text{C}$)	-20
Charge Current (amps)	.20	Float Current (amps)	.025
Trickle Charge (amps)	.025		

c. Capacity Checks: (Discharge to .50 volts any cell or to an average voltage of 1.00 volts per cell, whichever occurs first.)

	Cell <u>1</u>	Cell <u>2</u>	Cell <u>3</u>	Cell <u>4</u>	Cell <u>5</u>	ah <u>out</u>
Shadow 9						6.10
Shadow 10						4.91
Shadow 11	.991	.992	1.061	1.111	.841	3.66
Shadow 12	1.138	.454	1.144	1.139	1.109	2.55
Postcycling*	4.96	4.18	5.46	5.62	4.66	

*--Pack discontinued following shadow 12

d. Test results during Eclipse Seasons: (Figures 34 to 36).

(1) End of Discharge Voltages: The dip in the values shown during period 12 was due to the rise in the packs' ambient temperature (day 2156). Cell 2 was the low cell during this period. The increase is due to the reconditioning effect of the capacity check on day 2160 (slightly offset from the middle on this graph).

(2) End of Charge Voltages: Voltages are lower during period 12 due to environmental chamber malfunction.

(3) The pack was allowed to complete shadow 12 with a higher ambient temperature. This was because the pack was to be discontinued following this period as it was felt that all the useful information had been obtained. Pack was discontinued following shadow 12.

e. Performance during Sun Periods: Pack began test with an eclipse period and completed 11 sun periods prior to being discontinued. Following is a listing of the high, average and low cell voltages at the start and end of sun periods 8 through 11.

Sun Periods									
Voltages**	8		9		10		11		
	Start	End	Start	End	Start	End	Start	End	
High	1.605(1)	1.529(3)	1.582(1)	1.481(3)	1.535(1)	1.497(1,2)	1.620(1)	1.451(1)	
Average	1.563	1.438	1.534	1.459	1.523	1.478	1.554	1.385	
Low	1.509(5)	1.403(5)	1.503(4)	1.443(4)	1.512(5)	1.445(4)	1.480(4)	1.311(2)	

**--() indicates which cell

f. Cell Analysis:

(1) Cell 2 was torn down with the following observations:

(a) Positive plates were not coined along one side and at the bottom. The uncoined sides were located on the negative terminal side of the cell.

(b) No separator deterioration.

(c) Very small degree of migration located only in the middle of the plate stack.

(2) Chemical analysis of cell 2 is contained in Table II, Section VI.

KEY
 * HIGH END DISCHARGE VOLTAGE
 + AVE END DISCHARGE VOLTAGE
 • LOW END DISCHARGE VOLTAGE

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 40
 TEMPERATURE -20
 AMPERE RATE 6
 SERIAL 6-3-6-13.11-13.11-44.11-45
 GENERAL ELECTRIC CFIIS.

WQEC/C 77-134

PACK = 2046

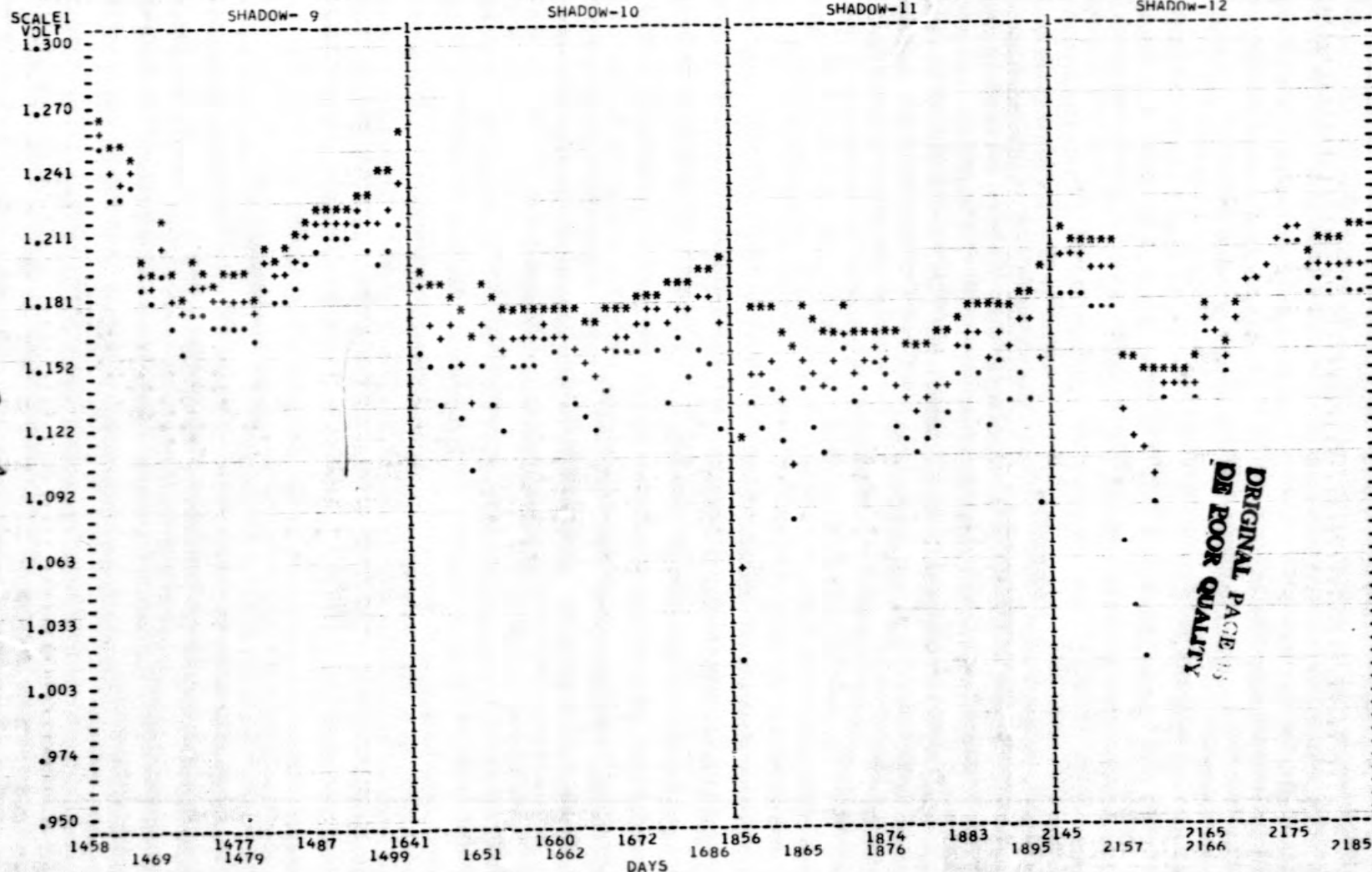


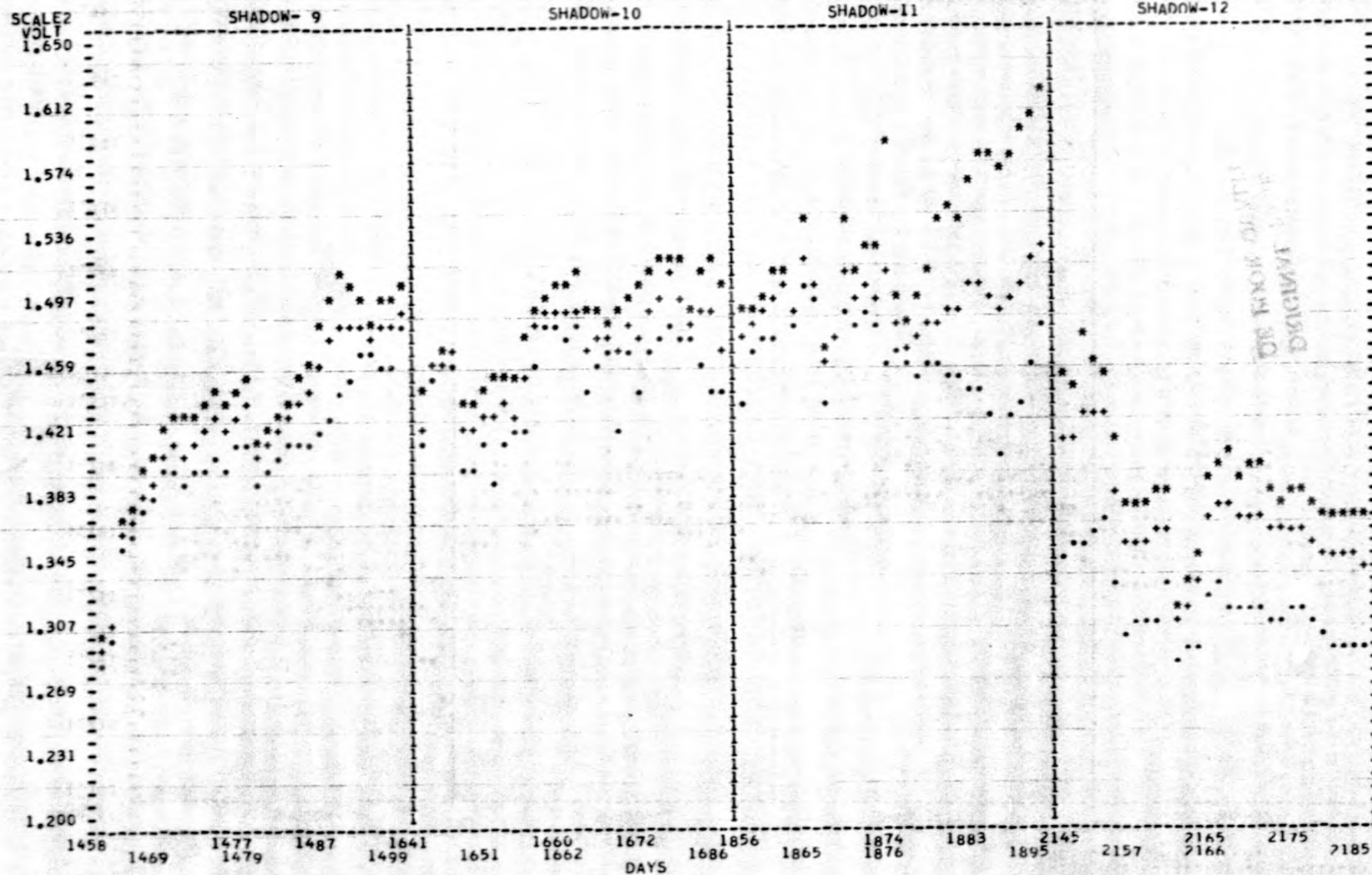
FIGURE 34

KEY
 * HIGH EOC
 + AVE EOC
 • LOW EOC

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 204B

DEPTH DISCHARGE 40
 TEMPERATURE -20
 AMPERE RATE 6
 SERIAL 6-3-6-13-11-13-11-44-11-45
 GENERAL ELECTRIC CFIIS.



NOTE: Pack discontinued following Shadow 12.

FIGURE 35

KEY
* AHD
+ AHI-TOTAL

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 204B

DEPTH DISCHARGE 40
TEMPERATURE -20
AMPERE RATE 6
SERIAL 6-3.6-13.11-13.11-44.11-45
GENERAL ELECTRIC CFIIS.

WQEC/C 77-134

SCALE
AHD AHI
3.50

3.25

2.99

2.74

2.48

2.23

1.97

1.72

1.47

1.21

.96

.70

.00

SHADOW-9

SHADOW-10

SHADOW-11

SHADOW-12

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OF POOR QUALITY.

1458 1469 1477 1479 1487 1499 1641 1651 1660 1662 1672 1686 1856 1865 1874 1876 1883 1895 2145 2157 2165 2166 2175 2185
DAYS

NOTE: Pack discontinued following Shadow 12.

FIGURE 36

DATE OF RUN	IS 10/20/76	PACK	DAY	HIGH-DIS	SHADOW =	AVE-DIS	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AHO	AHI
PACK = 2048						9 10 11 12						
2048	1458.	1	267	1	259	1	252	1	299	1	283	.410
2048	1459.	1	255	1	241	1	231	1	310	1	306	.894
2048	1460.	1	250	1	233	1	229	1	367	1	361	.921
2048	1462.	1	248	1	237	1	237	1	372	1	365	.608
2048	1465.	1	202	1	195	1	189	1	398	1	386	.837
2048	1467.	1	95	1	167	1	179	1	407	1	379	1.240
2048	1469.	1	216	1	204	1	194	1	423	1	384	1.459
2048	1470.	1	92	1	82	1	170	1	408	1	397	1.699
2048	1471.	1	83	1	75	1	159	1	412	1	398	1.788
2048	1472.	1	99	1	90	1	176	1	408	1	392	1.926
2048	1473.	1	96	1	88	1	176	1	411	1	395	2.023
2048	1474.	1	90	1	86	1	173	1	438	1	400	2.141
2048	1475.	1	92	1	81	1	169	1	447	1	404	2.352
2048	1476.	1	92	1	83	1	171	1	440	1	401	2.353
2048	1477.	1	91	1	82	1	170	1	445	1	410	2.370
2048	1479.	1	91	1	82	1	168	1	450	1	413	2.356
2048	1480.	1	184	1	177	1	165	1	402	1	394	2.338
2048	1481.	1	205	1	187	1	187	1	411	1	402	2.361
2048	1482.	1	202	1	183	1	183	1	418	1	407	2.336
2048	1483.	1	203	1	184	1	184	1	426	1	413	2.349
2048	1484.	1	209	1	196	1	190	1	438	1	414	2.370
2048	1485.	1	217	1	201	1	199	1	448	1	417	2.356
2048	1487.	1	221	1	209	1	207	1	459	1	421	2.389
2048	1489.	1	220	1	214	1	210	1	481	1	432	2.406
2048	1491.	1	221	1	215	1	219	1	500	1	447	2.411
2048	1493.	1	224	1	218	1	222	1	513	1	455	2.433
2048	1495.	1	226	1	222	1	226	1	507	1	455	2.433
2048	1497.	1	229	1	229	1	230	1	501	1	455	2.433
2048	1498.	1	239	1	239	1	243	1	485	1	459	2.433
2048	1499.	1	243	1	243	1	243	1	497	1	457	2.433
2048	1500.	1	260	1	233	1	235	1	500	1	463	2.433
2048	1501.	1	194	1	184	1	184	1	506	1	463	2.433
2048	1502.	1	189	1	171	1	169	1	444	1	419	2.433
2048	1503.	1	185	1	164	1	159	1	444	1	419	2.433
2048	1504.	1	184	1	164	1	159	1	464	1	433	2.433
2048	1505.	1	175	1	154	1	144	1	464	1	433	2.433
2048	1506.	1	166	1	144	1	134	1	438	1	400	2.433
2048	1507.	1	167	1	135	1	124	1	422	1	401	2.433
2048	1508.	1	181	1	171	1	161	1	431	1	410	2.433
2048	1509.	1	175	1	161	1	152	1	432	1	410	2.433
2048	1510.	1	174	1	156	1	148	1	434	1	414	2.433
2048	1511.	1	173	1	155	1	148	1	428	1	418	2.433
2048	1512.	1	173	1	162	1	151	1	453	1	421	2.433
2048	1513.	1	176	1	164	1	152	1	479	1	463	2.433
2048	1514.	1	176	1	169	1	156	1	487	1	480	2.433
2048	1515.	1	174	1	165	1	156	1	487	1	480	2.433
2048	1516.	1	175	1	161	1	148	1	491	1	478	2.433
2048	1517.	1	174	1	156	1	143	1	493	1	483	2.433
2048	1518.	1	170	1	150	1	135	1	493	1	470	2.433
2048	1519.	1	167	1	147	1	122	1	475	1	461	2.433
2048	1520.	1	176	1	160	1	138	1	485	1	470	2.433
2048	1521.	1	176	1	164	1	144	1	493	1	478	2.433
2048	1522.	1	172	1	161	1	144	1	484	1	469	2.433
2048	1523.	1	181	1	177	1	155	1	503	1	478	2.433
2048	1524.	1	183	1	177	1	157	1	509	1	478	2.433
2048	1525.	1	184	1	175	1	157	1	521	1	465	2.433
2048	1526.	1	185	1	168	1	154	1	524	1	471	2.433
2048	1527.	1	186	1	163	1	153	1	524	1	481	2.433
2048	1528.	1	187	1	163	1	153	1	524	1	473	2.433
2048	1529.	1	192	1	171	1	163	1	524	1	474	2.433
2048	1530.	1	194	1	174	1	163	1	524	1	461	2.433
2048	1531.	1	201	1	180	1	163	1	524	1	445	2.433
2048	1532.	1	201	1	180	1	163	1	524	1	447	2.433

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DATE	OF RUN	IS 10/20/76	AVE-DIS	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AHI	AHI
DAY	HIGH	DIS							
040000	1	56	1.059	1.014	1.489	1.471	1.440	1.100	1.200
040000	1	57	1.048	1.131	1.490	1.480	1.465	1.000	1.400
040000	1	58	1.049	1.122	1.494	1.487	1.477	1.200	1.500
040000	1	59	1.053	1.139	1.511	1.500	1.475	1.400	1.700
040000	1	60	1.034	1.114	1.510	1.508	1.507	1.550	1.800
040000	1	61	1.033	1.079	1.490	1.487	1.481	1.700	1.000
040000	1	62	1.051	1.141	1.540	1.523	1.508	1.800	1.100
040000	1	63	1.044	1.123	1.508	1.502	1.495	2.000	1.100
040000	1	64	1.039	1.111	1.468	1.458	1.439	2.100	1.200
040000	1	65	1.052	1.141	1.472	1.472	1.472	2.200	1.200
040000	1	66	1.064	1.157	1.540	1.512	1.492	2.000	1.500
040000	1	67	1.045	1.131	1.515	1.496	1.480	2.300	1.500
040000	1	68	1.050	1.141	1.527	1.503	1.487	2.300	1.600
040000	1	69	1.057	1.151	1.531	1.500	1.486	2.400	1.600
040000	1	70	1.054	1.146	1.587	1.514	1.462	2.400	1.600
040000	1	71	1.042	1.124	1.496	1.481	1.467	2.500	1.700
040000	1	72	1.037	1.115	1.480	1.467	1.457	2.500	1.500
040000	1	73	1.034	1.112	1.499	1.473	1.455	2.400	1.200
040000	1	74	1.038	1.115	1.515	1.483	1.456	2.200	1.500
040000	1	75	1.033	1.121	1.542	1.486	1.460	2.300	1.500
040000	1	76	1.043	1.128	1.554	1.491	1.455	2.300	1.500
040000	1	77	1.036	1.145	1.541	1.491	1.449	2.200	1.500
040000	1	78	1.035	1.158	1.565	1.502	1.447	2.200	1.500
040000	1	79	1.042	1.148	1.584	1.505	1.442	2.100	1.600
040000	1	80	1.053	1.153	1.578	1.497	1.432	2.000	1.200
040000	1	81	1.064	1.153	1.570	1.487	1.405	1.900	1.100
040000	1	82	1.060	1.133	1.582	1.499	1.425	1.900	1.100
040000	1	83	1.070	1.146	1.596	1.508	1.434	1.700	1.900
040000	1	84	1.069	1.131	1.605	1.519	1.462	1.400	1.700
040000	1	85	1.054	1.085	1.620	1.531	1.482	1.800	1.100
040000	1	86	1.022	1.183	1.454	1.410	1.345	1.800	1.200
040000	1	87	1.097	1.179	1.444	1.411	1.354	1.000	1.400
040000	1	88	1.097	1.180	1.472	1.431	1.355	1.200	1.600
040000	1	89	1.095	1.177	1.461	1.425	1.360	1.600	1.000
040000	1	90	1.092	1.174	1.451	1.426	1.368	1.900	1.100
040000	1	91	1.093	1.174	1.410	1.380	1.331	1.700	1.900
040000	1	92	1.077	1.068	1.375	1.352	1.298	2.200	1.100
040000	1	93	1.088	1.038	1.373	1.352	1.306	2.200	1.200
040000	1	94	1.100	1.017	1.376	1.355	1.309	2.300	1.100
040000	1	95	1.100	1.085	1.380	1.357	1.305	2.300	1.300
040000	1	96	1.140	1.136	1.380	1.362	1.326	2.500	1.400
040000	1	97	1.140	1.138	1.311	1.305	1.286	2.500	1.500
040000	1	98	1.141	1.137	1.331	1.316	1.288	2.500	1.500
040000	1	99	1.141	1.134	1.346	1.331	1.292	2.400	1.300
040000	1	00	1.170	1.165	1.387	1.369	1.324	1.700	1.300
040000	1	01	1.162	1.161	1.399	1.378	1.338	1.900	1.200
040000	1	02	1.154	1.145	1.406	1.376	1.338	2.300	1.200
040000	1	03	1.172	1.171	1.389	1.365	1.317	2.100	1.900
040000	1	04	1.190	1.188	1.402	1.370	1.314	2.800	1.500
040000	1	05	1.189	1.188	1.400	1.368	1.311	2.600	1.500
040000	1	06	1.194	1.194	1.381	1.360	1.308	2.500	1.600
040000	1	07	1.205	1.204	1.378	1.357	1.306	2.500	1.600
040000	1	08	1.209	1.208	1.381	1.359	1.316	2.300	1.800
040000	1	09	1.210	1.208	1.384	1.360	1.316	2.300	1.800
040000	1	10	1.201	1.183	1.374	1.352	1.307	2.200	1.900
040000	1	11	1.194	1.187	1.369	1.347	1.300	2.800	1.900
040000	1	12	1.193	1.182	1.364	1.342	1.295	2.800	1.900
040000	1	13	1.193	1.186	1.364	1.342	1.292	2.700	1.700
040000	1	14	1.194	1.184	1.364	1.341	1.290	2.700	1.600
040000	1	15	1.194	1.182	1.364	1.341	1.290	2.600	1.600

*** OUT OF RANGE ARGUMENT TO IFIX

2	0.0000	0.0000	9999.00000	15.00000
3	0.0763	1.65000	123.30000	167.00000
4	0.05085	3.50000	-9.90000	33.00000

ORIGINAL PAGE IS
OF POOR QUALITY

6. Pack 205A, 5-cells

a. Cell information: (Same as Pack 201A, Section V.B.1.).

b. Parameters:

Depth of Discharge (%)	60	Discharge Current (amps)	3.0
Charge Control*	CC	Temperature (°C)	0
Charge Current (amps)	.30	Float Current (amps)	.20

*Pack was on coulometer control prior to shadow 11.

c. Capacity Checks: (Discharge to .50 volts any cell or to an average voltage of 1.00 volts per cell, whichever occurs first.)

	Cell <u>1</u>	Cell <u>2</u>	Cell <u>3</u>	Cell <u>4</u>	Cell <u>5</u>	ah <u>out</u>
Shadow 11					*	5.10
Shadow 12	1.029	1.049	1.062	.855		6.60
Shadow 13	1.010	1.045	1.047	.897		6.24
Shadow 14	.978	1.039	1.051	.938		5.65
Shadow 15	.942	1.038	1.050	.933		5.40
Shadow 16	.962	1.034	1.034	.978		5.54
Shadow 17	.916	1.042	1.054	.967		5.20

*--Removed for analysis prior to shadow 8

d. Test results during Eclipse Seasons: (Figures 37 to 42).

(1) End of Discharge Voltages: The reconditioning effect, due to the capacity check, are very pronounced except for shadow 11. This may be due to the fact that this was the first shadow that the pack was on a constant current charge control, due to the failure of its coulometer.

(2) End of Charge Voltages: Historically, the voltages have shown a trend to increase in the amount of divergence from one shadow to the other; but have now maintained a somewhat constant value of divergence the last 4 shadow periods.

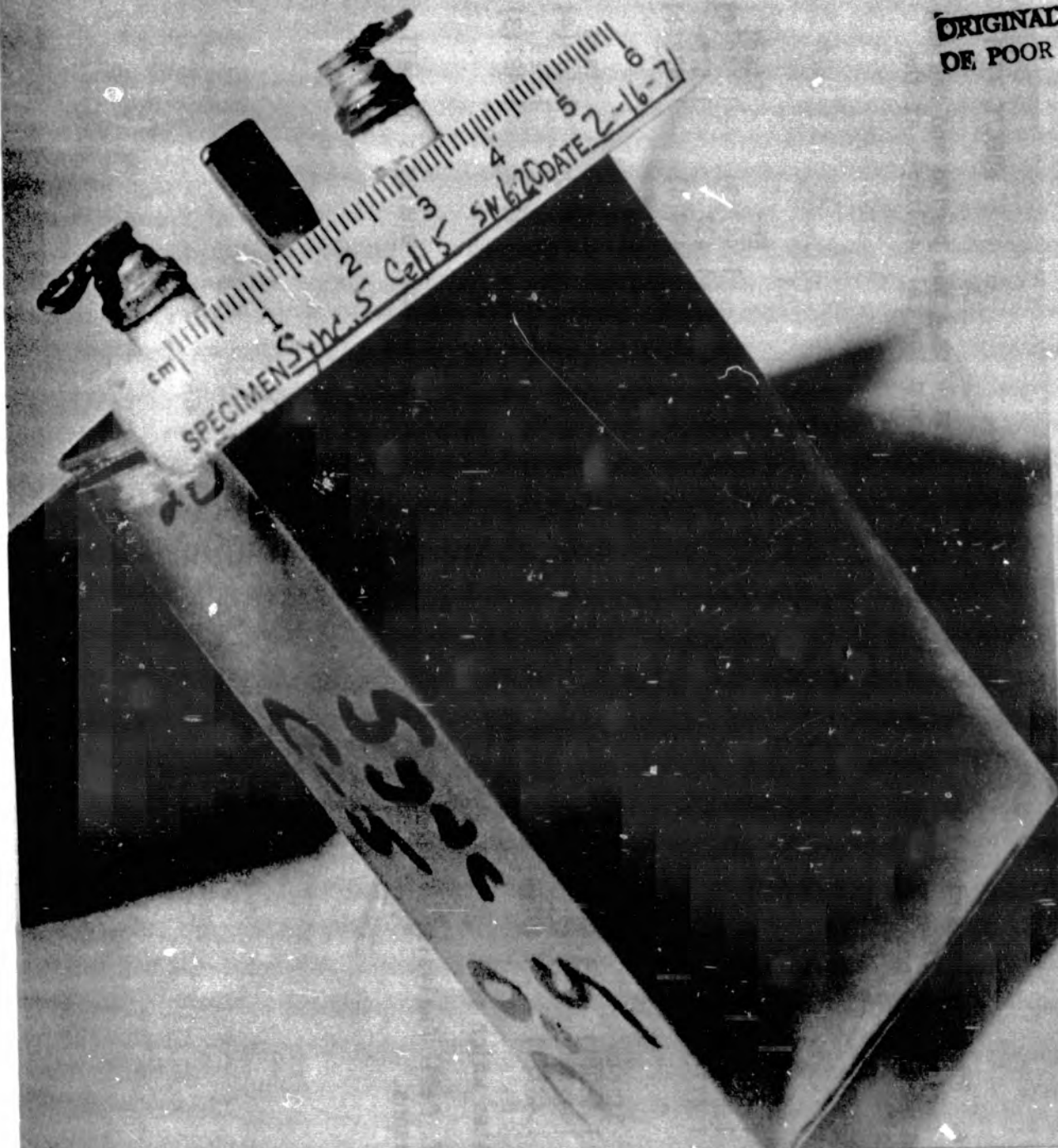
(3) Cell 5 was removed for analysis prior to shadow 8.

e. Performance during Sun Periods: The pack began test with a sun period and has now completed 18 periods. Following is a listing of the high, average and low cell voltages at the start and end of sun periods 11 through 18.

Sun Periods									
<u>Voltages**</u>	11		12		13		14		
	Start	End	Start	End	Start	End	Start	End	
	High	1.530(4)	1.484(3)	1.543(4)	1.462(3)	1.489(4)	1.447(3)	1.540(4)	1.518(4)
	Average	1.502	1.462	1.519	1.450	1.469	1.437	1.512	1.476
<u>Voltages</u>	15		16		17		18		
	Start	End	Start	End	Start	End	Start	End	
	High	1.550(4)	1.444(3)	1.514(4)	1.440(3)	1.570(4)	1.432(2)	1.578(4)	1.439(3)
	Average	1.521	1.422	1.487	1.433	1.532	1.407	1.529	1.429
<u>Voltages</u>	11		12		13		14		
	Start	End	Start	End	Start	End	Start	End	
	Low	1.477(3)	1.441(1)	1.501(1)	1.432(1)	1.442(1)	1.429(4)	1.472(1)	1.430(1)

**--() indicates which cell

f. Cell Analysis: Following are the photographs showing the visual analysis of cell 5 which completed 7 eclipse seasons.

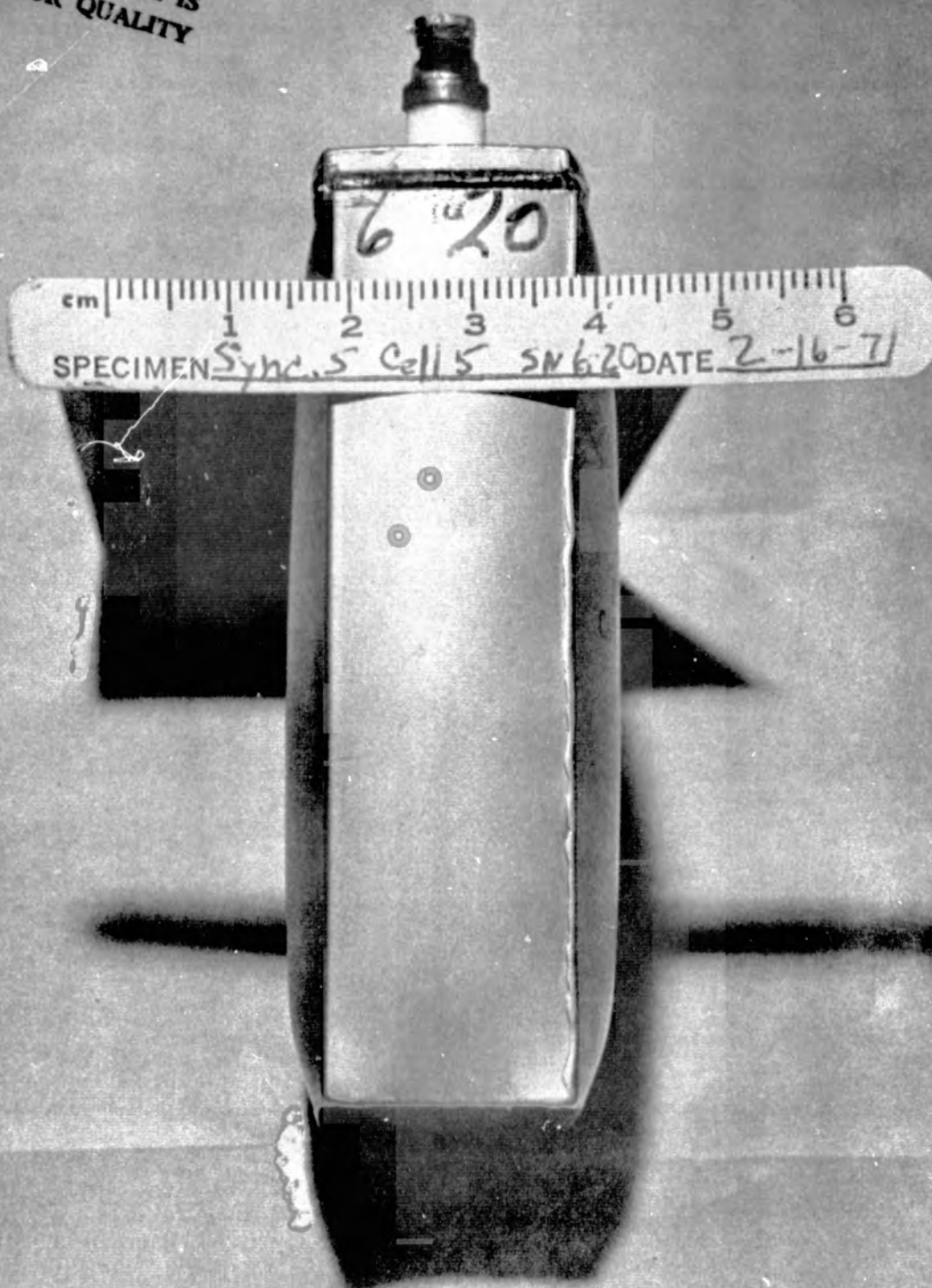
ORIGINAL PAGE 68
DE POOR QUALITY

This photograph shows a dark blue deposit on the upper portion of the negative terminal. A small deposit is located on the lower portion of the positive terminal. (Sync 5: 0° C, 60%, 6 ah, GE)

PHOTOGRAPH 12

94

ORIGINAL PAGE IS
OF POOR QUALITY



This illustrates pressure distortion of the cell case.
(Sync 5: 0° C, 60%, 6 ah, GE)

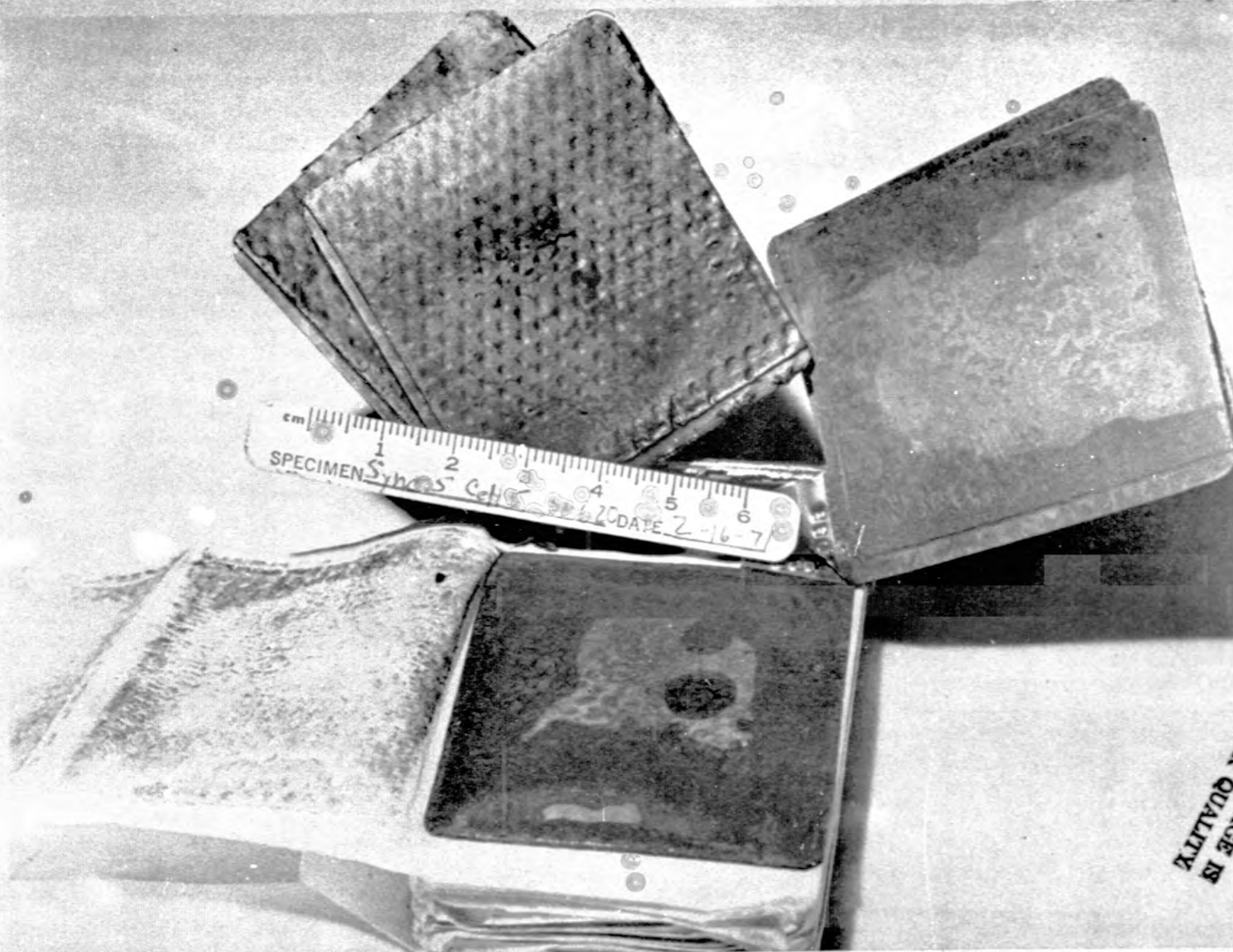
WOEC/C 77-134

cm 1 2 3 4 5
SPECIMEN 5-10 SM DATE

ORIGINAL PAGE IS
OF POOR QUALITY

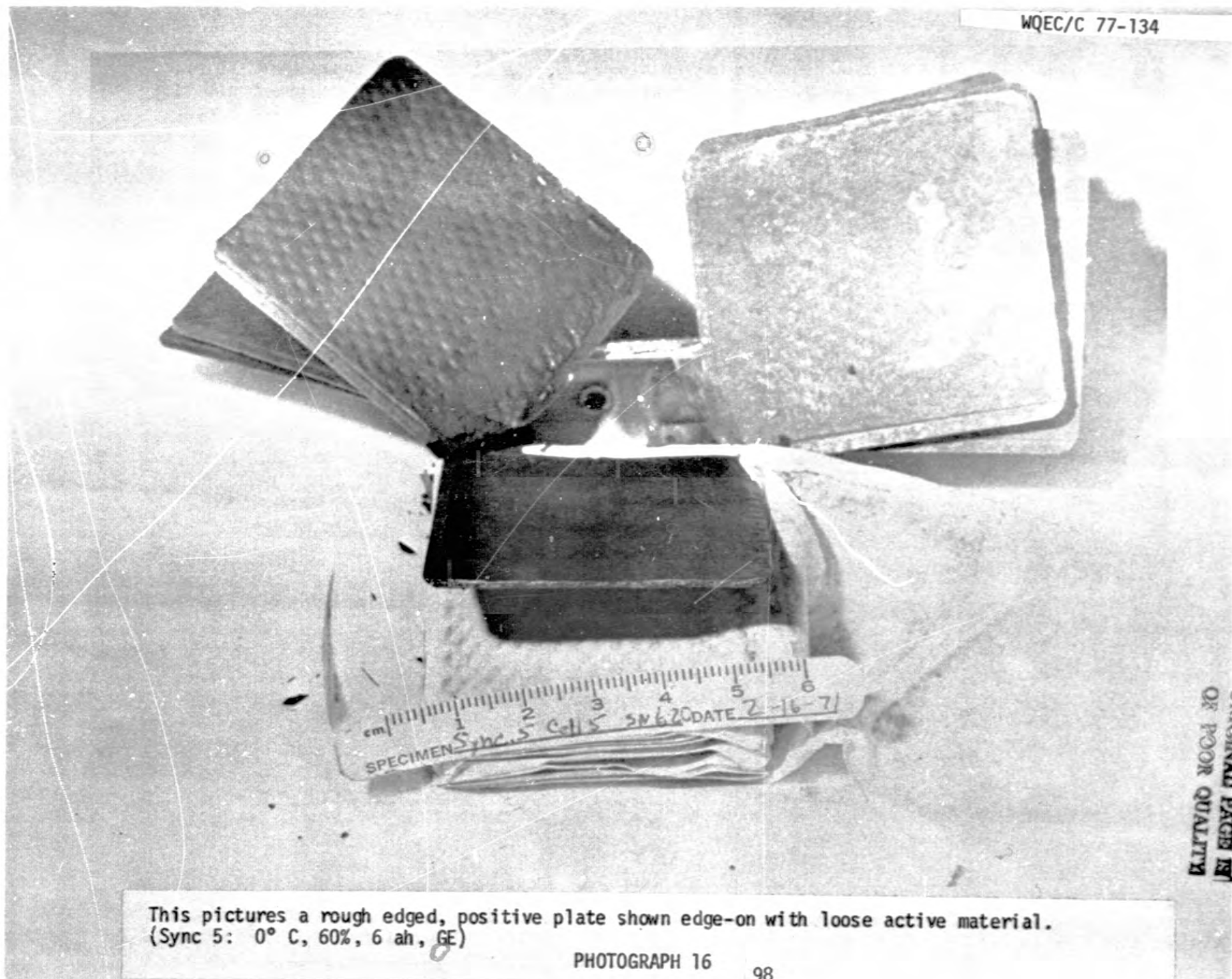
Blistering, separator dryness, and spot migration are illustrated.
(Sync 5: 0° C, 60%, 6 ah, GE)

PHOTOGRAPH 14



ORIGINAL PAGE IS
OF POOR QUALITY

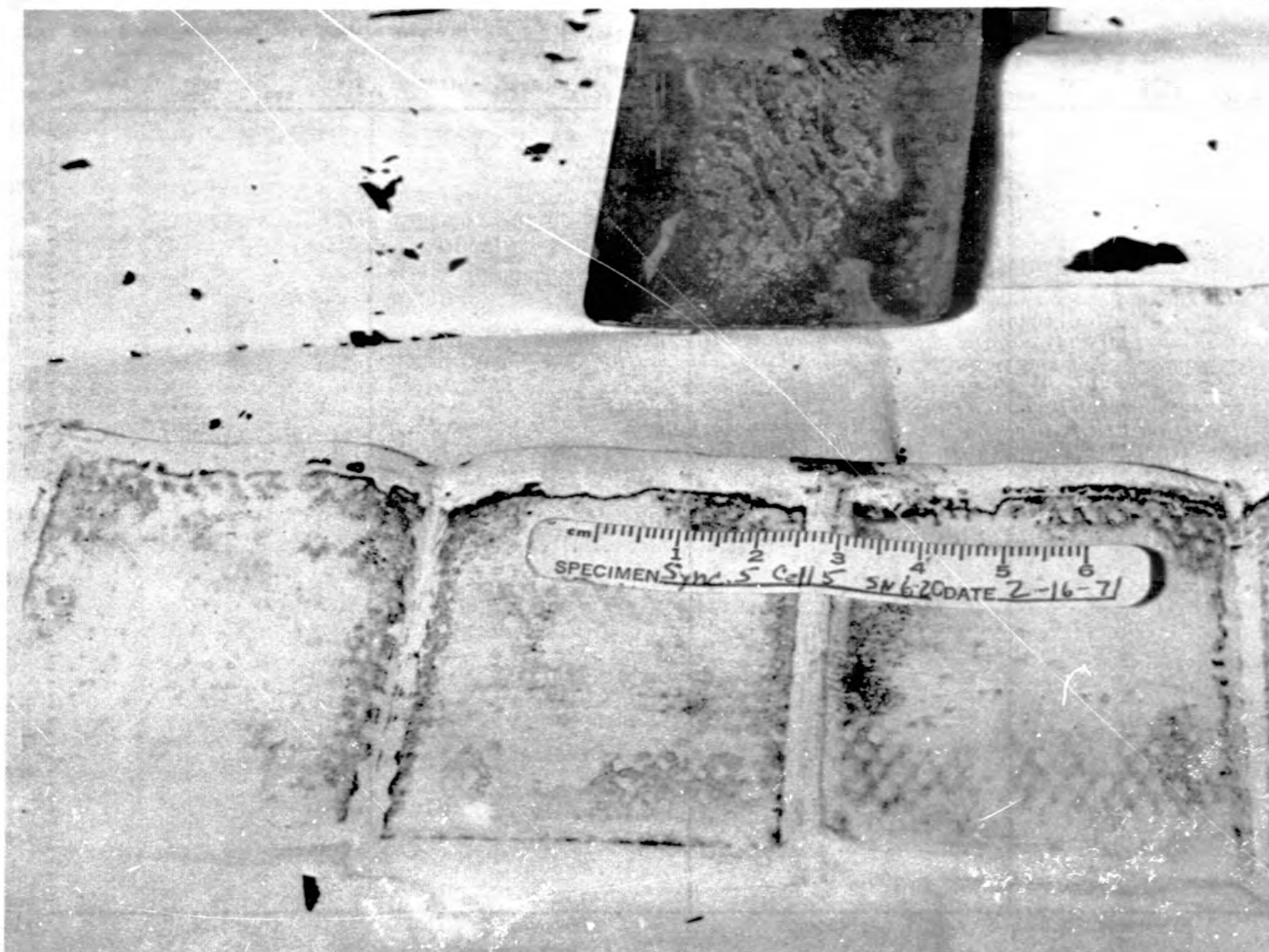
This photograph shows dryness and lack of moisture distribution within the cell. Migration coincides with areas of greatest moisture where active material gets greatest use.
(Sync 5: 0° C, 60%, 6 ah, GE)



This pictures a rough edged, positive plate shown edge-on with loose active material.
(Sync 5: 0° C, 60%, 6 ah, GE)

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OF POOR QUALITY



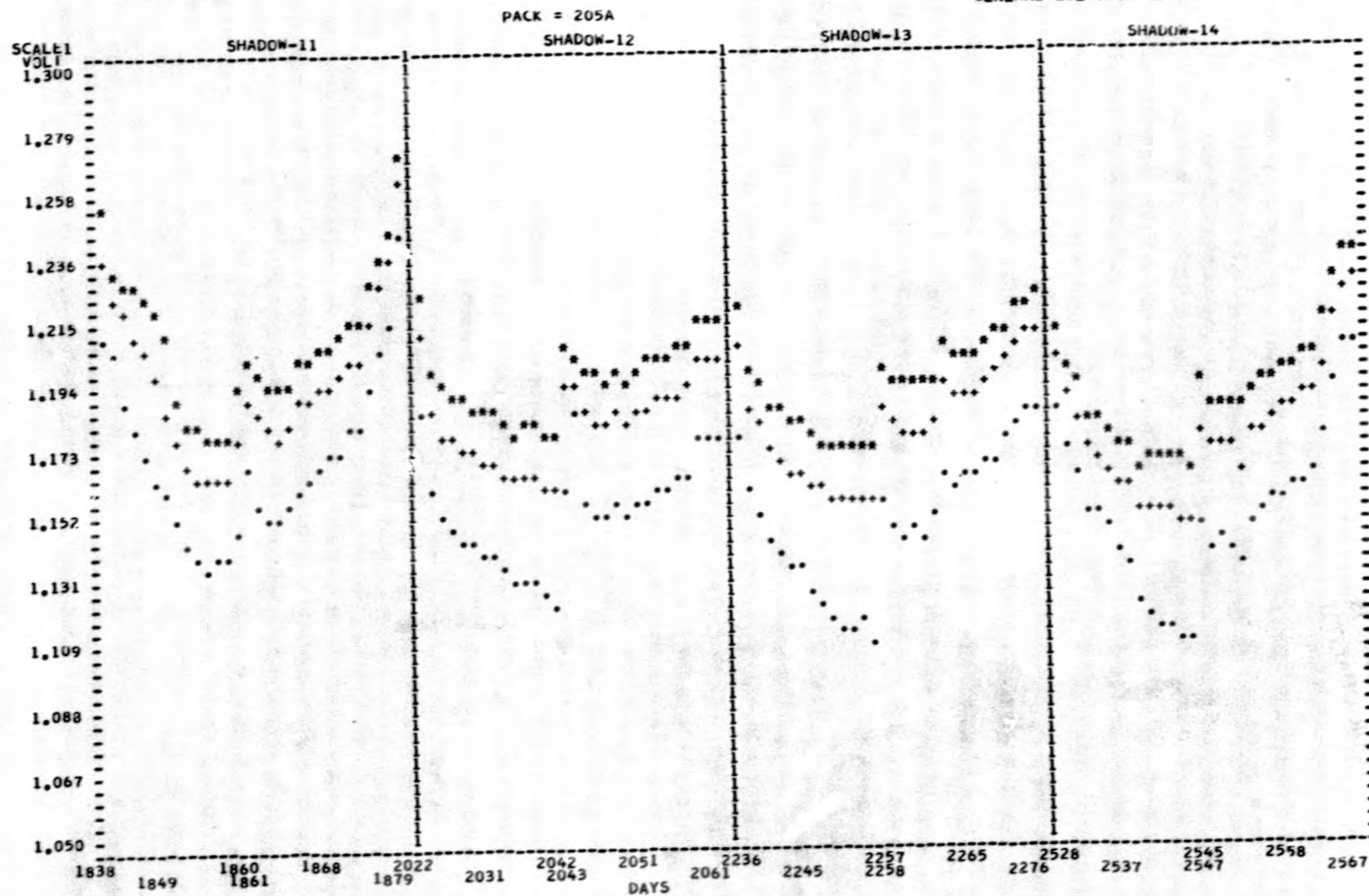
A hot spot is shown on the separator material corresponding to the upper portion of the cell where the separator folded around the plate buss.

PHOTOGRAPH 17

KEY
 * HIGH END DISCHARGE VOLTAGE
 + AVE END DISCHARGE VOLTAGE
 . LOW END DISCHARGE VOLTAGE

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60
 TEMPERATURE 00
 AMPERE RATE 06
 SERIAL 11-43,11-4211-4111-22 6-20
 GENERAL ELECTRIC CELLS



NOTE: Cell 5 removed for analysis prior to Shadow 8.

FIGURE 37

KEY
 * HIGH END DISCHARGE VOLTAGE
 + AVE END DISCHARGE VOLTAGE
 • LOW END DISCHARGE VOLTAGE

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60
 TEMPERATURE 00
 AMPERE RATE 06
 SERIAL 11-43.11-42.11-41.11-22.6-20
 GENERAL ELECTRIC CFI 15

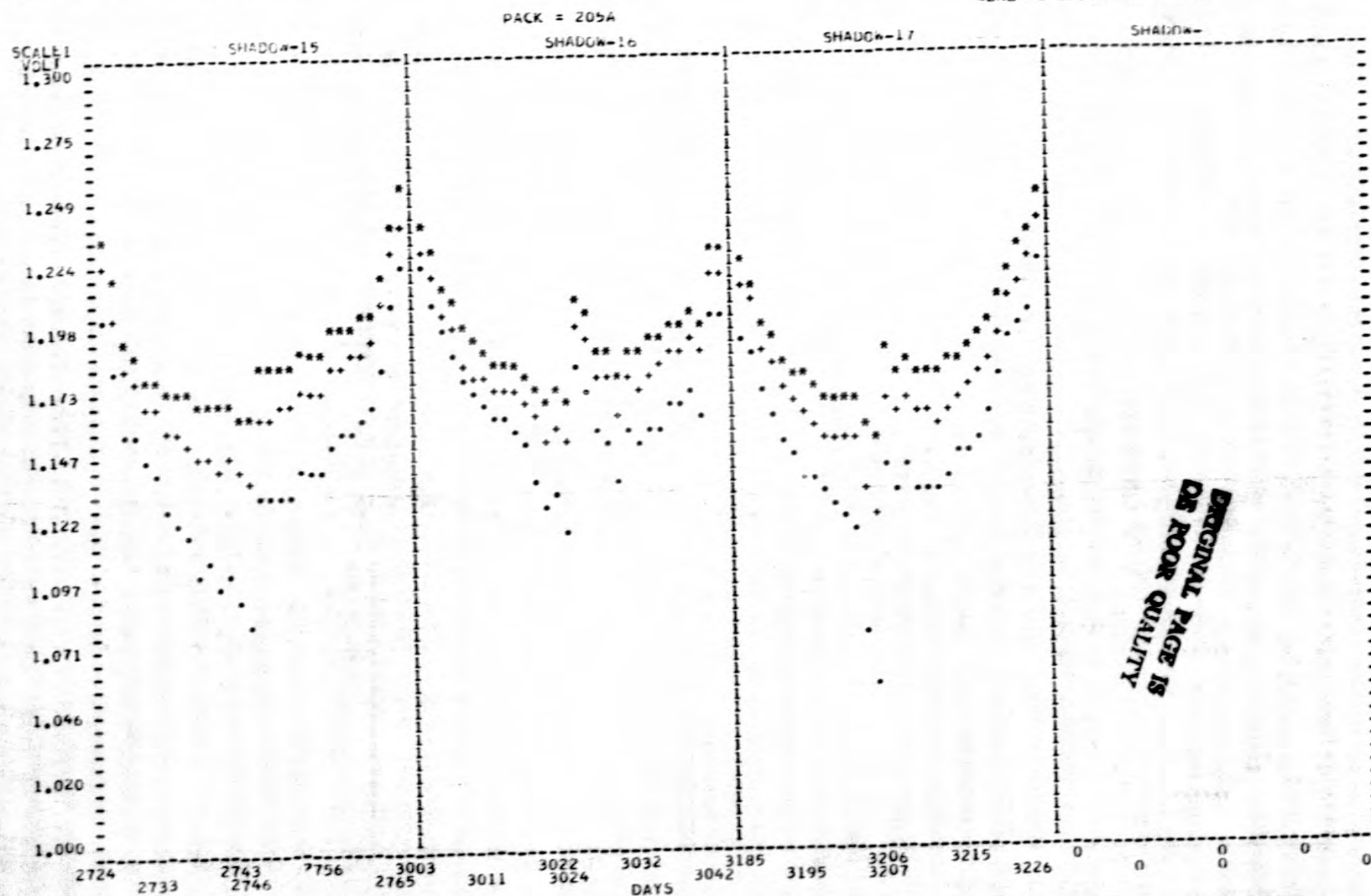


FIGURE 38

NOTE: Cell 5 removed for analysis prior to Shadow 8.

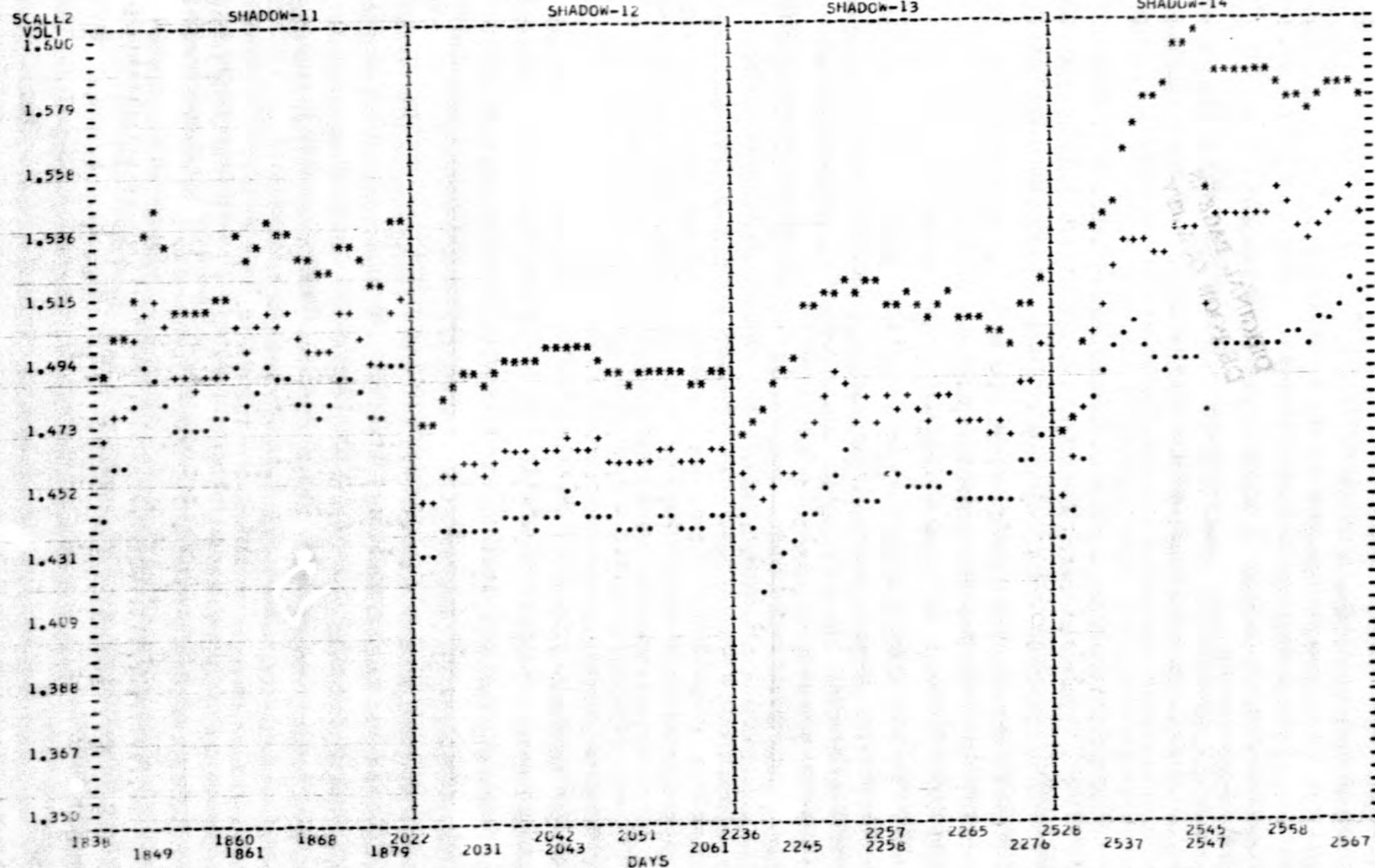
KEY
 * HIGH EOC
 + AVE EOC
 • LOW EOC

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 205A

DEPTH DISCHARGE 60
 TEMPERATURE 00
 AMPERE RATE 06
 SERIAL 11-43, 11-4211-4111-22 6-20
 GENERAL ELECTRIC CILLS

WQEC/C 77-134



NOTE: Cell 5 removed for analysis prior to Shadow 8.

FIGURE 39

KEY
 * HIGH EOC
 • AVE EOC
 • LOW EOC

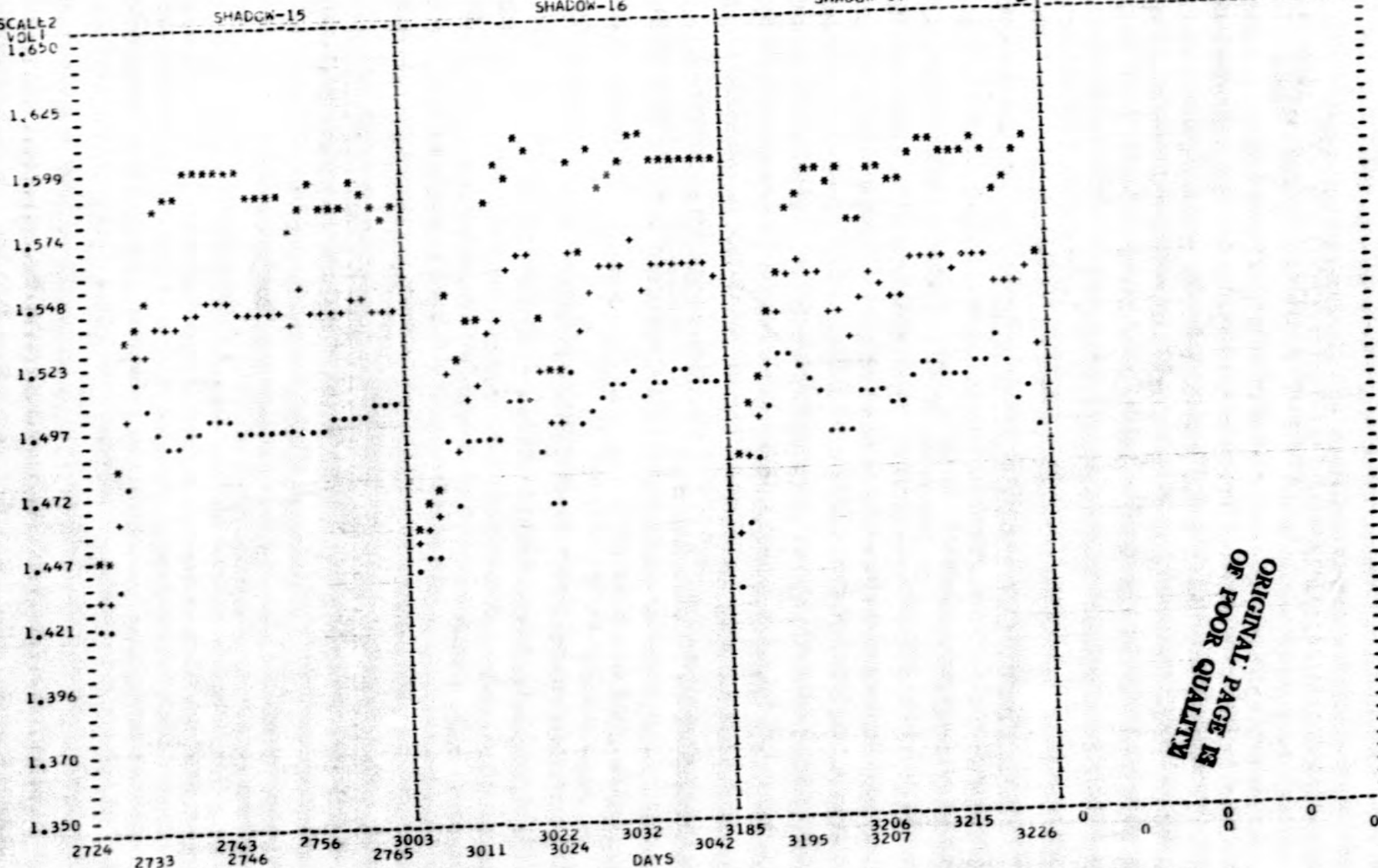
SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 205A

DEPTH DISCHARGE 60
 TEMPERATURE 00
 AMPERE RATE 06
 SERIAL 11-43.11-42.11-41.11-22.6-20
 GENERAL ELECTRIC CF115

WQEC/C 77-134

SCALE 2
 VOLT
 1.650



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 OF POOR QUALITY

FIGURE 40

NOTE: Cell 5 removed for analysis prior to Shadow 8.

KEY
 * AHU
 + AHU-TOTAL

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 205A

DEPTH DISCHARGE 60
 TEMPERATURE 00
 AMPERE RATE 06
 SERIAL 11-43, 11-4211-4111-22 6-20
 GENERAL ELECTRIC CELLS

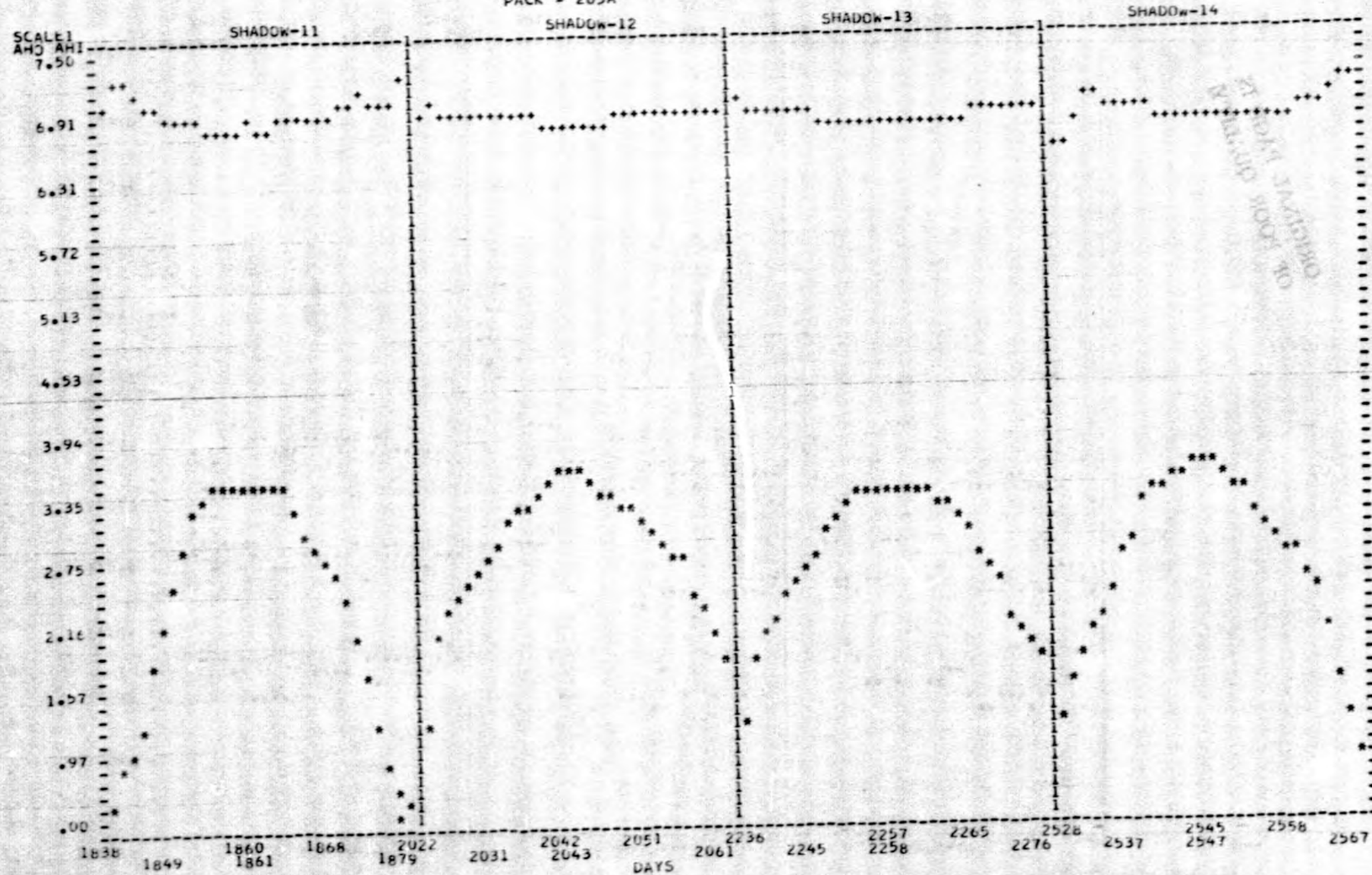
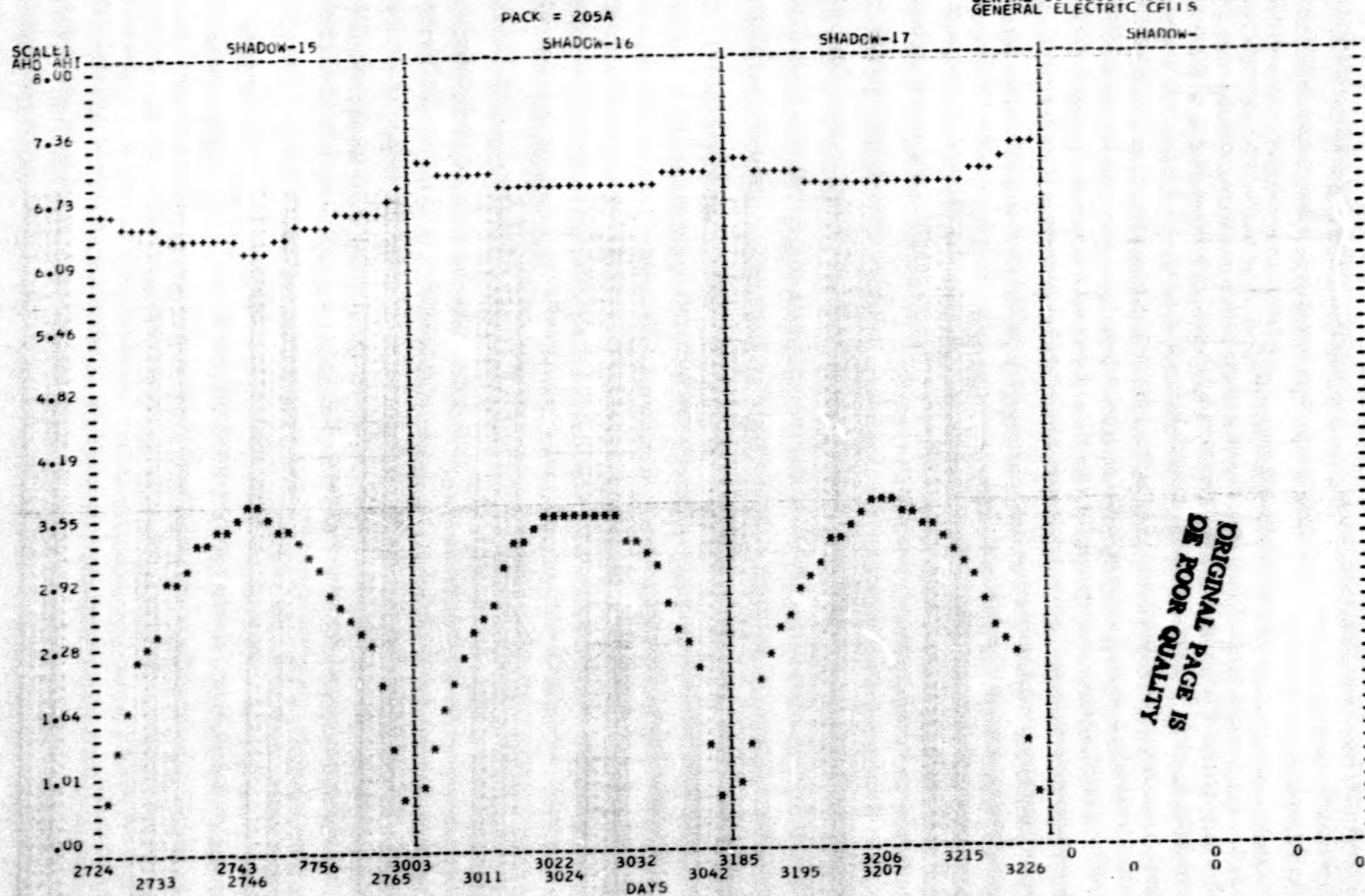


FIGURE 41

NOTE: Cell 5 removed for analysis prior to Shadow 8.

DEPTH DISCHARGE 60 WDEC/C 77-134
TEMPERATURE 00
AMPERE RATE 06
SERIAL 11-43,11-42,11-41,11-22,6-20
GENERAL ELECTRIC CFI 15



ORIGINAL PAGE IS
OF POOR QUALITY

NOTE: Cell 5 removed for analysis prior to Shadow 8.

FIGURE 42

PACK	DAY	HIGH-DIS SHADOW =	AVE-DIS 11 12 13 14	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AHO	AHI
PACK =	205A								
205A	1838.	1.253	1.237	1.213	1.488	1.467	1.445	.498	7.072
205A	1840.	1.234	1.223	1.205	1.502	1.479	1.459	.893	7.210
205A	1841.	1.230	1.220	1.189	1.502	1.479	1.459	1.000	7.210
205A	1842.	1.227	1.213	1.180	1.514	1.479	1.480	1.252	7.137
205A	1843.	1.224	1.209	1.175	1.538	1.511	1.495	1.862	7.062
205A	1844.	1.220	1.200	1.165	1.547	1.516	1.490	2.214	7.005
205A	1845.	1.211	1.184	1.161	1.533	1.505	1.481	2.559	6.960
205A	1846.	1.190	1.178	1.153	1.511	1.488	1.472	2.891	6.924
205A	1847.	1.182	1.169	1.143	1.511	1.489	1.472	3.178	6.896
205A	1848.	1.180	1.163	1.140	1.511	1.486	1.473	3.400	6.882
205A	1849.	1.177	1.164	1.136	1.512	1.491	1.475	3.502	6.809
205A	1850.	1.177	1.165	1.137	1.514	1.490	1.476	3.520	6.817
205A	1851.	1.178	1.166	1.137	1.515	1.491	1.476	3.520	6.838
205A	1852.	1.179	1.166	1.137	1.517	1.508	1.493	3.520	6.843
205A	1853.	1.194	1.179	1.168	1.528	1.499	1.481	3.520	6.852
205A	1854.	1.202	1.190	1.188	1.544	1.506	1.486	3.481	6.841
205A	1855.	1.197	1.184	1.158	1.547	1.512	1.492	3.460	6.826
205A	1856.	1.193	1.180	1.152	1.547	1.508	1.489	3.429	6.849
205A	1857.	1.193	1.179	1.151	1.557	1.510	1.490	3.244	6.905
205A	1858.	1.196	1.183	1.157	1.577	1.521	1.481	3.001	6.893
205A	1859.	1.201	1.188	1.162	1.597	1.541	1.481	2.873	6.878
205A	1860.	1.202	1.189	1.163	1.626	1.566	1.481	2.734	6.889
205A	1861.	1.205	1.192	1.168	1.652	1.592	1.478	2.583	6.953
205A	1862.	1.207	1.195	1.171	1.677	1.617	1.481	2.430	6.983
205A	1863.	1.210	1.198	1.174	1.703	1.643	1.489	2.288	6.983
205A	1864.	1.217	1.204	1.180	1.730	1.670	1.486	2.166	7.089
205A	1865.	1.217	1.204	1.180	1.757	1.697	1.476	2.055	7.055
205A	1866.	1.228	1.216	1.193	1.784	1.724	1.479	1.908	7.072
205A	1867.	1.238	1.227	1.207	1.811	1.751	1.494	1.621	7.003
205A	1868.	1.246	1.235	1.216	1.838	1.778	1.496	1.502	7.210
205A	1869.	1.269	1.260	1.245	1.865	1.805	1.472	1.300	6.900
205A	1870.	1.222	1.211	1.187	1.892	1.832	1.449	1.040	6.990
205A	1871.	1.198	1.185	1.159	1.919	1.859	1.437	2.280	6.960
205A	1872.	1.192	1.179	1.152	1.946	1.886	1.439	2.400	6.950
205A	1873.	1.191	1.177	1.149	1.973	1.913	1.438	2.520	6.940
205A	1874.	1.189	1.175	1.145	1.999	1.939	1.439	2.640	6.930
205A	1875.	1.187	1.173	1.142	2.026	1.966	1.437	2.760	6.920
205A	1876.	1.187	1.173	1.142	2.053	1.993	1.440	2.880	6.900
205A	1877.	1.185	1.170	1.139	2.080	2.020	1.443	3.000	6.880
205A	1878.	1.184	1.170	1.138	2.107	2.047	1.443	3.120	6.870
205A	1879.	1.181	1.166	1.135	2.134	2.074	1.443	3.240	6.870
205A	1880.	1.181	1.166	1.135	2.161	2.101	1.441	3.360	6.860
205A	1881.	1.179	1.164	1.133	2.188	2.128	1.441	3.480	6.840
205A	1882.	1.180	1.165	1.134	2.215	2.155	1.443	3.600	6.830
205A	1883.	1.177	1.161	1.129	2.242	2.182	1.443	3.720	6.830
205A	1884.	1.176	1.159	1.127	2.269	2.209	1.446	3.840	6.830
205A	1885.	1.207	1.193	1.162	2.296	2.236	1.446	3.960	6.830
205A	1886.	1.201	1.195	1.167	2.323	2.263	1.444	4.080	6.830
205A	1887.	1.199	1.185	1.165	2.350	2.290	1.444	4.200	6.830
205A	1888.	1.197	1.183	1.163	2.377	2.317	1.443	4.320	6.830
205A	1889.	1.195	1.181	1.161	2.404	2.344	1.441	4.440	6.870
205A	1890.	1.198	1.185	1.164	2.431	2.371	1.439	4.560	6.870
205A	1891.	1.196	1.182	1.162	2.458	2.398	1.440	4.680	6.880
205A	1892.	1.199	1.185	1.165	2.485	2.425	1.441	4.800	6.890
205A	1893.	1.201	1.187	1.167	2.512	2.452	1.442	4.920	6.890
205A	1894.	1.203	1.189	1.169	2.539	2.479	1.441	5.040	6.920
205A	1895.	1.204	1.190	1.170	2.566	2.506	1.441	5.160	6.950
205A	1896.	1.205	1.191	1.171	2.593	2.533	1.441	5.280	6.960
205A	1897.	1.208	1.194	1.174	2.620	2.560	1.441	5.400	6.960
205A	1898.	1.219	1.202	1.176	2.647	2.587	1.441	5.520	6.960

WPEC/C 77-134

DO NOT WRITE IN THESE SPACES

PACK	DAY	HIG-DIS	AVE-DIS	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AHU	AH
205A	2599.	216	203	177	588	463	442	2.000	6.900
205A	2601.	217	204	178	589	464	442	1.800	6.900
205A	2603.	222	208	178	589	464	443	1.200	7.000
205A	2605.	199	187	159	469	455	437	1.800	6.900
205A	2607.	193	180	151	477	453	437	2.000	6.900
205A	2609.	187	173	143	484	455	426	2.200	6.900
205A	2611.	184	169	140	490	456	435	2.400	6.900
205A	2613.	181	166	135	494	468	443	2.600	6.900
205A	2615.	180	166	128	509	472	445	2.800	6.900
205A	2617.	177	162	120	513	483	452	3.000	6.800
205A	2619.	174	158	117	514	491	458	3.150	6.800
205A	2621.	174	157	115	515	491	463	3.200	6.800
205A	2623.	175	157	115	520	487	463	3.300	6.800
205A	2625.	175	157	116	517	475	448	3.300	6.800
205A	2627.	174	155	111	518	483	447	3.400	6.800
205A	2629.	174	155	111	510	474	446	3.400	6.800
205A	2631.	199	185	153	511	479	456	3.400	6.800
205A	2633.	192	179	148	514	479	453	3.400	6.800
205A	2635.	192	177	145	510	477	452	3.300	6.800
205A	2637.	193	179	147	507	474	451	3.300	6.800
205A	2639.	192	177	144	510	483	453	3.200	6.800
205A	2641.	194	180	150	516	481	455	3.200	6.800
205A	2643.	205	193	165	508	473	449	3.100	6.800
205A	2645.	203	190	162	506	473	449	3.000	6.900
205A	2647.	204	191	164	505	470	447	2.800	6.900
205A	2649.	204	195	168	501	471	447	2.600	6.900
205A	2651.	207	197	170	502	471	446	2.500	6.900
205A	2653.	209	201	176	497	468	446	2.200	6.900
205A	2655.	213	208	183	510	487	460	2.000	6.900
205A	2657.	220	209	184	510	487	460	1.800	6.900
205A	2659.	221	210	185	520	497	470	1.600	6.500
205A	2661.	222	210	187	527	497	470	1.400	6.600
205A	2663.	213	204	172	535	497	470	1.200	6.800
205A	2665.	199	191	164	540	478	460	1.000	7.000
205A	2667.	192	183	152	536	502	480	800	6.900
205A	2669.	183	173	140	540	511	490	600	6.900
205A	2671.	180	168	138	546	522	503	400	6.900
205A	2673.	178	166	133	560	532	506	200	6.900
205A	2675.	173	160	133	572	531	503	200	6.900
205A	2677.	173	160	133	577	531	503	300	6.900
205A	2679.	166	151	120	580	530	498	400	6.800
205A	2681.	168	152	117	582	527	488	500	6.800
205A	2683.	169	152	113	594	538	494	500	6.800
205A	2685.	170	152	113	597	538	494	500	6.800
205A	2687.	167	148	110	598	537	494	600	6.800
205A	2689.	165	147	110	548	510	476	600	6.800
205A	2691.	193	177	149	568	539	497	600	6.800
205A	2693.	187	171	141	587	540	498	500	6.800
205A	2695.	186	172	142	587	540	499	400	6.800
205A	2697.	185	171	141	587	540	499	300	6.800
205A	2699.	185	175	136	587	541	500	100	6.800
205A	2701.	190	178	150	587	542	500	100	6.800
205A	2703.	192	188	155	585	545	502	800	6.800
205A	2705.	196	192	157	580	548	501	700	6.800
205A	2707.	197	198	159	578	547	497	500	6.800
205A	2709.	199	199	162	576	547	506	400	6.800
205A	2711.	202	191	166	581	547	508	100	6.800
205A	2713.	204	191	176					
205A	2715.	214	199						

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PACK	DAY	HIGH-DIS	AVE-DIS	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AHO	AHI
205A	2565.	1.226	1.215	1.193	1.583	1.543	1.510	1.600	7.000
205A	2566.	1.236	1.225	1.205	1.583	1.550	1.521	1.200	7.100
205A	2567.	1.236	1.227	1.207	1.579	1.542	1.517	.800	7.200
1	.00424	1.30000	106.00000	1.11000	131.90000				

*** OUT OF RANGE ARGUMENT TO IFIX

2	.00000	.00000*****	9999.00000	15.00000
3	.00424	1.60000	136.80000	164.80000
4	.11864	7.50000	4.48000	72.60000

RECEIVED
 DE LOB 2000
 01/11/77

DATE OF RUN	IS 08/27/76	AVE-DIS	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AHU	AHI
PACK	DAY	15 16 17	15 16 17					
205A	2724.	1.234	1.222	1.201	1.449	1.432	1.419	.770
205A	2725.	1.217	1.206	1.184	1.449	1.433	1.420	1.232
205A	2726.	1.194	1.181	1.156	1.481	1.462	1.434	1.601
205A	2728.	1.190	1.178	1.157	1.532	1.503	1.476	2.091
205A	2729.	1.180	1.168	1.148	1.536	1.526	1.516	2.337
205A	2730.	1.179	1.165	1.142	1.550	1.527	1.506	2.460
205A	2733.	1.174	1.157	1.125	1.583	1.540	1.498	2.892
205A	2734.	1.172	1.156	1.122	1.589	1.538	1.492	2.953
205A	2735.	1.172	1.153	1.116	1.590	1.539	1.494	3.075
205A	2737.	1.168	1.147	1.104	1.598	1.541	1.495	3.321
205A	2738.	1.170	1.149	1.107	1.597	1.544	1.498	3.321
205A	2739.	1.166	1.143	1.096	1.599	1.546	1.500	3.444
205A	2740.	1.168	1.146	1.101	1.600	1.546	1.501	3.445
205A	2741.	1.165	1.141	1.091	1.600	1.546	1.502	3.569
205A	2742.	1.163	1.137	1.082	1.601	1.543	1.498	3.691
205A	2743.	1.181	1.163	1.130	1.589	1.543	1.499	3.691
205A	2744.	1.181	1.164	1.130	1.591	1.544	1.498	3.569
205A	2749.	1.183	1.166	1.133	1.590	1.543	1.498	3.444
205A	2750.	1.183	1.166	1.133	1.588	1.541	1.498	3.445
205A	2752.	1.188	1.172	1.141	1.595	1.536	1.496	3.321
205A	2753.	1.189	1.174	1.144	1.595	1.535	1.497	3.198
205A	2754.	1.187	1.171	1.141	1.592	1.543	1.498	3.075
205A	2755.	1.197	1.182	1.155	1.585	1.542	1.499	2.829
205A	2757.	1.199	1.184	1.158	1.586	1.543	1.502	2.699
205A	2758.	1.200	1.186	1.160	1.584	1.543	1.502	2.583
205A	2759.	1.202	1.188	1.162	1.595	1.549	1.504	2.461
205A	2760.	1.205	1.191	1.166	1.589	1.547	1.504	2.337
205A	2762.	1.219	1.206	1.183	1.586	1.545	1.510	1.845
205A	2764.	1.238	1.227	1.206	1.580	1.542	1.510	1.227
205A	2765.	1.252	1.241	1.223	1.583	1.543	1.510	.740
205A	3003.	1.239	1.231	1.222	1.458	1.450	1.442	.830
205A	3004.	1.227	1.218	1.210	1.466	1.456	1.446	1.230
205A	3005.	1.215	1.205	1.197	1.474	1.461	1.449	1.600
205A	3006.	1.207	1.196	1.188	1.546	1.517	1.491	1.850
205A	3007.	1.196	1.185	1.178	1.524	1.485	1.465	2.120
205A	3009.	1.191	1.179	1.172	1.537	1.510	1.491	2.460
205A	3010.	1.187	1.176	1.170	1.537	1.511	1.491	2.580
205A	3011.	1.183	1.172	1.163	1.584	1.532	1.490	2.710
205A	3014.	1.184	1.174	1.161	1.600	1.539	1.492	3.080
205A	3016.	1.185	1.174	1.159	1.596	1.559	1.507	3.340
205A	3017.	1.176	1.168	1.152	1.608	1.563	1.509	3.340
205A	3019.	1.172	1.160	1.138	1.603	1.561	1.510	3.420
205A	3020.	1.167	1.154	1.129	1.540	1.519	1.487	3.580
205A	3021.	1.173	1.158	1.132	1.516	1.495	1.468	3.570
205A	3022.	1.167	1.150	1.118	1.516	1.495	1.468	3.600
205A	3024.	1.211	1.198	1.182	1.601	1.562	1.517	3.600
205A	3025.	1.205	1.192	1.175	1.563	1.532	1.498	3.600
205A	3026.	1.190	1.178	1.157	1.605	1.548	1.502	3.570
205A	3027.	1.198	1.175	1.152	1.590	1.556	1.510	3.570
205A	3029.	1.177	1.164	1.139	1.595	1.558	1.514	3.540
205A	3030.	1.189	1.178	1.158	1.597	1.558	1.514	3.320
205A	3031.	1.187	1.175	1.152	1.611	1.567	1.519	3.320
205A	3032.	1.191	1.179	1.157	1.608	1.548	1.506	3.200
205A	3033.	1.194	1.182	1.160	1.598	1.556	1.512	3.670
205A	3035.	1.199	1.188	1.167	1.601	1.559	1.513	2.700
205A	3036.	1.200	1.190	1.170	1.597	1.556	1.517	2.400
205A	3037.	1.201	1.191	1.172	1.598	1.557	1.516	2.280
205A	3038.	1.200	1.187	1.164	1.598	1.561	1.515	2.040

WOEC/C 77-134

ORIGINAL PAGE IS
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DATE OF RUN	IS 08/27/76	PACK DAY	HIGH-DIS	AVE-DIS	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AHO	AHI
205A	3041.	1.227	1.218	1.201	1.598	1.561	1.515	1.200	7.020	
205A	3042.	1.229	1.221	1.205	1.599	1.553	1.515	1.720	7.130	
205A	3185.	1.225	1.215	1.193	1.481	1.451	1.430	1.831	7.096	
205A	3186.	1.216	1.207	1.188	1.505	1.482	1.459	1.230	7.102	
205A	3188.	1.200	1.189	1.171	1.514	1.496	1.483	1.846	7.022	
205A	3189.	1.193	1.182	1.163	1.537	1.518	1.500	2.091	6.997	
205A	3191.	1.185	1.174	1.155	1.553	1.539	1.521	2.460	6.966	
205A	3192.	1.180	1.168	1.146	1.580	1.552	1.524	2.884	6.952	
205A	3194.	1.177	1.162	1.137	1.585	1.557	1.520	3.300	6.930	
205A	3195.	1.174	1.160	1.135	1.592	1.555	1.515	3.722	6.914	
205A	3196.	1.170	1.155	1.130	1.596	1.555	1.510	4.144	6.901	
205A	3198.	1.168	1.152	1.128	1.589	1.553	1.493	4.568	6.878	
205A	3199.	1.170	1.155	1.124	1.596	1.553	1.493	4.990	6.870	
205A	3200.	1.170	1.153	1.119	1.573	1.527	1.490	5.415	6.860	
205A	3202.	1.158	1.131	1.078	1.572	1.543	1.510	5.840	6.857	
205A	3204.	1.155	1.123	1.056	1.592	1.552	1.508	6.264	6.889	
205A	3206.	1.186	1.168	1.141	1.592	1.548	1.507	6.688	6.844	
205A	3207.	1.180	1.162	1.134	1.591	1.544	1.504	7.112	6.847	
205A	3208.	1.183	1.168	1.140	1.588	1.542	1.500	7.536	6.858	
205A	3209.	1.180	1.163	1.134	1.601	1.556	1.515	7.960	6.855	
205A	3210.	1.179	1.162	1.134	1.604	1.560	1.517	8.384	6.844	
205A	3211.	1.178	1.159	1.131	1.606	1.561	1.517	8.808	6.893	
205A	3213.	1.181	1.165	1.138	1.597	1.561	1.515	9.232	6.890	
205A	3214.	1.185	1.170	1.145	1.600	1.565	1.513	9.656	6.889	
205A	3215.	1.188	1.173	1.149	1.601	1.567	1.515	10.080	6.919	
205A	3216.	1.191	1.177	1.153	1.605	1.569	1.516	10.504	6.946	
205A	3218.	1.196	1.183	1.161	1.601	1.569	1.520	10.928	6.942	
205A	3220.	1.210	1.194	1.180	1.585	1.549	1.520	11.352	6.960	
205A	3221.	1.220	1.210	1.192	1.590	1.549	1.520	11.776	7.140	
205A	3222.	1.228	1.215	1.198	1.599	1.547	1.503	12.200	7.190	
205A	3225.	1.232	1.222	1.203	1.604	1.552	1.506	12.624	7.210	
205A	3226.	1.249	1.240	1.223	1.556	1.524	1.494	13.048	7.270	

WQEC/C 77-134

OUT OF RANGE ARGUMENT TO IFIX

2	.00000	.00000	9999.00000	15.00000
3	.00508	1.65000	136.90000	166.10000
4	.12712	8.00000	2.20000	77.70000

7. Pack 206A, 5-cells

a. Cell information: (Same as Pack 201A, Section V.B.1.).

b. Parameters:

Depth of Discharge (%)	80	Discharge Current (amps)	4.0
Charge Control*	CC	Temperature (°C)	0
Charge Current (amps)	.40	Float Current (amps)	.40

*--Pack was on coulometer control prior to capacity check of shadow 11.

c. Capacity Checks: (Discharge to .50 volts any cell or to an average voltage of 1.00 volts per cell, whichever occurs first.)

	Cell <u>1</u>	Cell <u>2</u>	Cell <u>3</u>	Cell <u>4</u>	Cell <u>5</u>	ah <u>out</u>
Shadow 11				**	***	7.00
Shadow 12	.783	1.100	1.119			5.74
Shadow 13	.732	1.091	1.112			5.64
Shadow 14	.783	1.045	1.015			4.73
Shadow 15	.823	1.074	1.034			4.90
Shadow 16	.699	1.138	1.140			5.23
Shadow 17	.739	1.128	1.124			4.80

**--Failed, low end of discharge voltage during shadow 4 (day 1127).

***--Failed, shorted during shadow 11 (day 1850) prior to capacity check.

d. Test results during Eclipse Seasons: (Figures 43 to 48).

(1) End of Discharge Voltages: Low values shown at the beginning of shadow 11 are caused by cell 5, which shorted out on day 1850. The effect of the capacity checks are not as pronounced as those of the other packs (203A and 205A) at 0°C. Cell 1 was the low cell on discharge during shadow 17.

(2) End of Charge Voltages: There is a wide divergence in the voltages as was evident in the other packs at 0°C.

(3) Cell 4 failed, low end of discharge voltage, during shadow 4.

e. Performance during Sun Periods: The pack began test with a sun period and has now completed 18 periods. Following is a listing of the high, average and low cell voltages at the start and end of sun periods 11 through 18.

Sun Periods									
Voltages****	11		12		13		14		
	Start	End	Start	End	Start	End	Start	End	
High	1.517(3)	1.485(1)	1.516(3)	1.472(2)	1.493(1)	1.470(2)	1.520(1)	1.478(1)	
Average	1.478	1.448	1.495	1.450	1.463	1.451	1.491	1.418	
Low	1.443(2)	1.395(3)	1.477(2)	1.402(3)	1.429(3)	1.419(3)	1.470(3)	1.383(2)	
Voltages	15		16		17		18		
	Start	End	Start	End	Start	End	Start	End	
High	1.510(1)	1.436(2)	1.530(2)	1.429(2)	1.535(1)	1.411(2)	1.528(1,3)	1.447(2)	
Average	1.478	1.411	1.513	1.417	1.502	1.395	1.507	1.430	
Low	1.431(3)	1.389(3)	1.480(3)	1.402(3)	1.472(3)	1.380(3)	1.466(2)	1.416(1)	

****--indicates which cell

f. Cell Analysis:

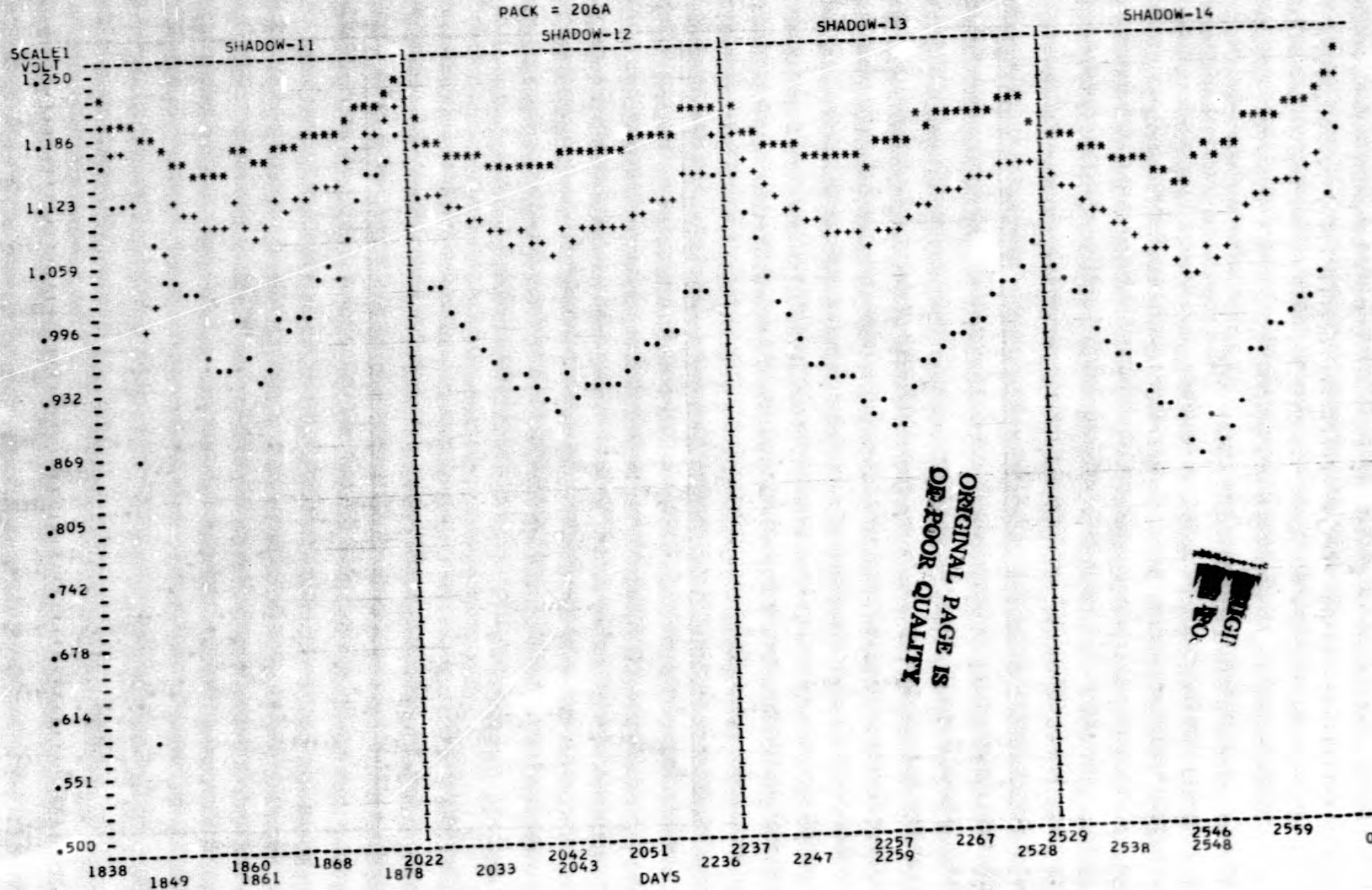
- (1) Photographs showing the visual analysis of cell 4 were shown in the earlier 1973 report.
- (2) Cell 5 was not removed from the pack because doing so would disturb the other cells.

KEY
 * HIGH END DISCHARGE VOLTAGE
 * AVE END DISCHARGE VOLTAGE
 * LOW END DISCHARGE VOLTAGE

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 80
 TEMPERATURE 00
 AMPERE RATE 06
 SERIAL 6-6, 6-9, 11-15, 11-37, 11-39
 GENERAL ELECTRIC CELLS

PACK = 206A



NOTE: (1) Cell 4 failed during Shadow 4.
 (2) Cell 5 failed during Shadow 11.

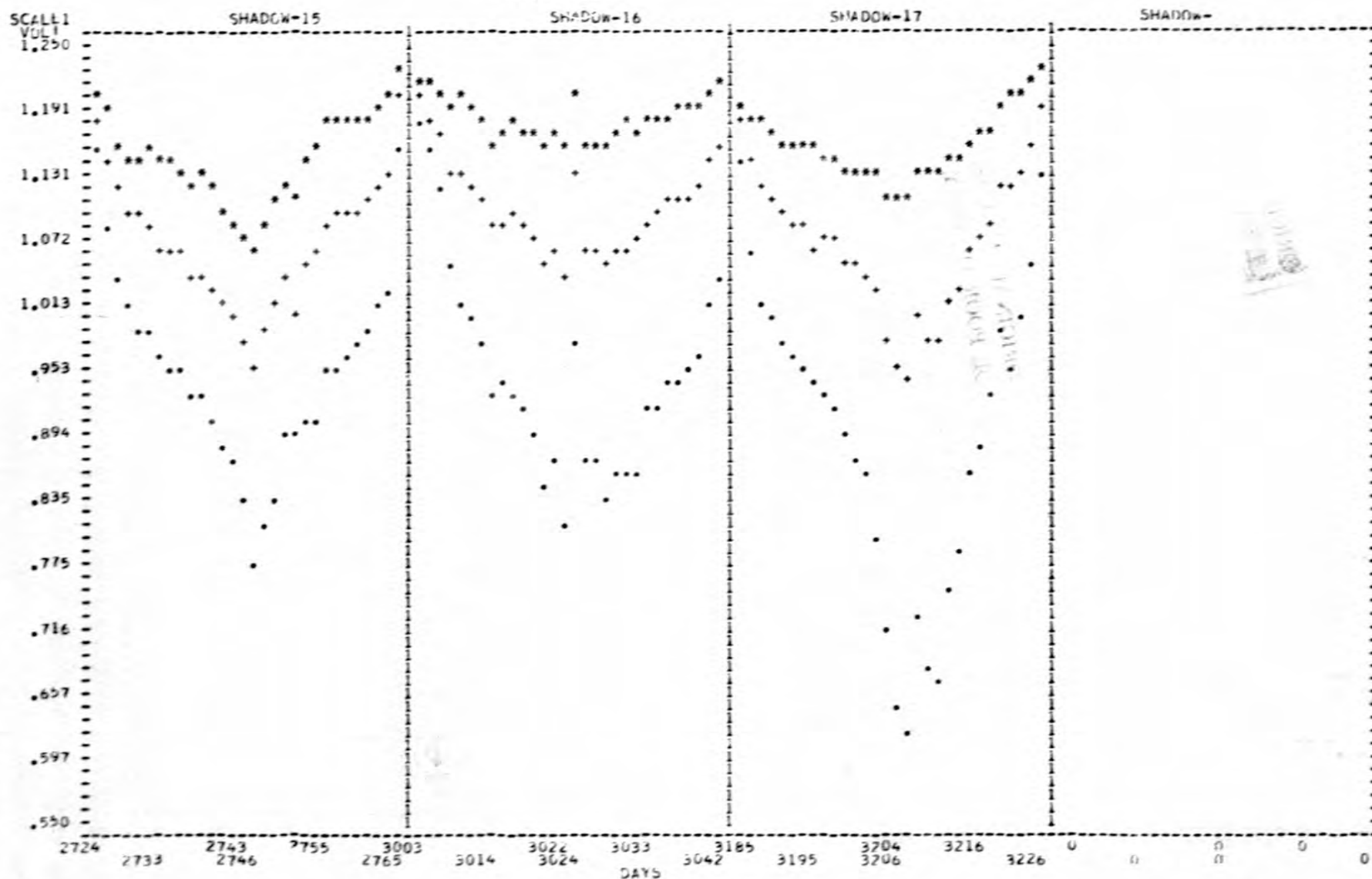
FIGURE 43

KEY
 * HIGH END DISCHARGE VOLTAGE
 + AVE END DISCHARGE VOLTAGE
 • LOW END DISCHARGE VOLTAGE

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 80
 TEMPERATURE 00 WQEC/C 77-134
 AMPERE RATE 0A
 SERIAL 6-6-6-9.11-15.11-37.11-39
 GENERAL ELECTRIC CELLS

PACK = 206A



NOTE: (1) Cell 4 failed during Shadow 4.
 (2) Cell 5 failed during Shadow 11.

FIGURE 44

KEY
 * HIGH EDC
 + AVL EDC
 • LOW EDC

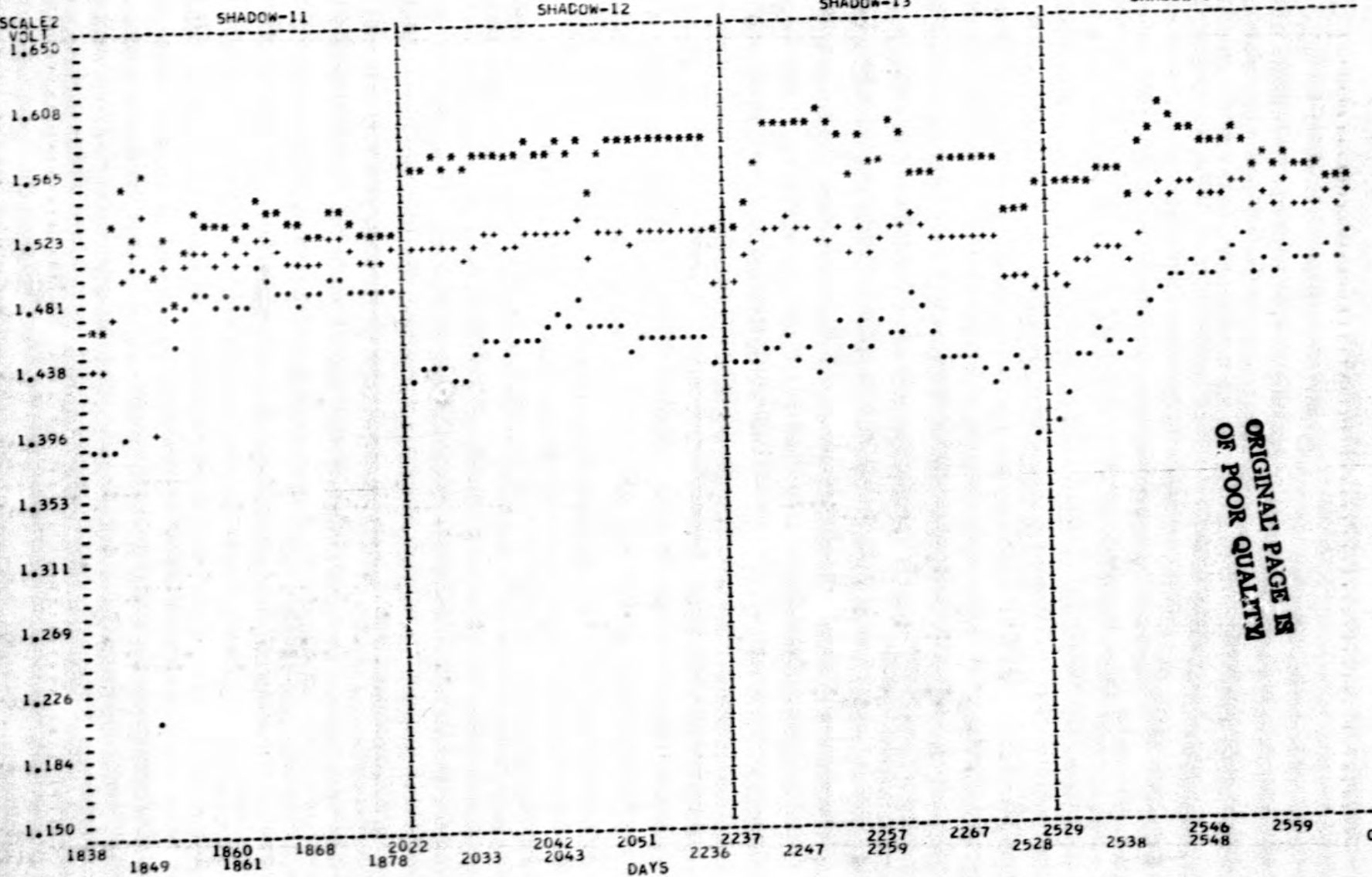
SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 80
 TEMPERATURE 00
 AMPERE RATE 06
 SERIAL 6-6-9-11-15-11-37-11-39
 GENERAL ELECTRIC CELLS

WOEC/C 77-134

PACK = 206A

SCALE 2
 VOLTS
 1.650

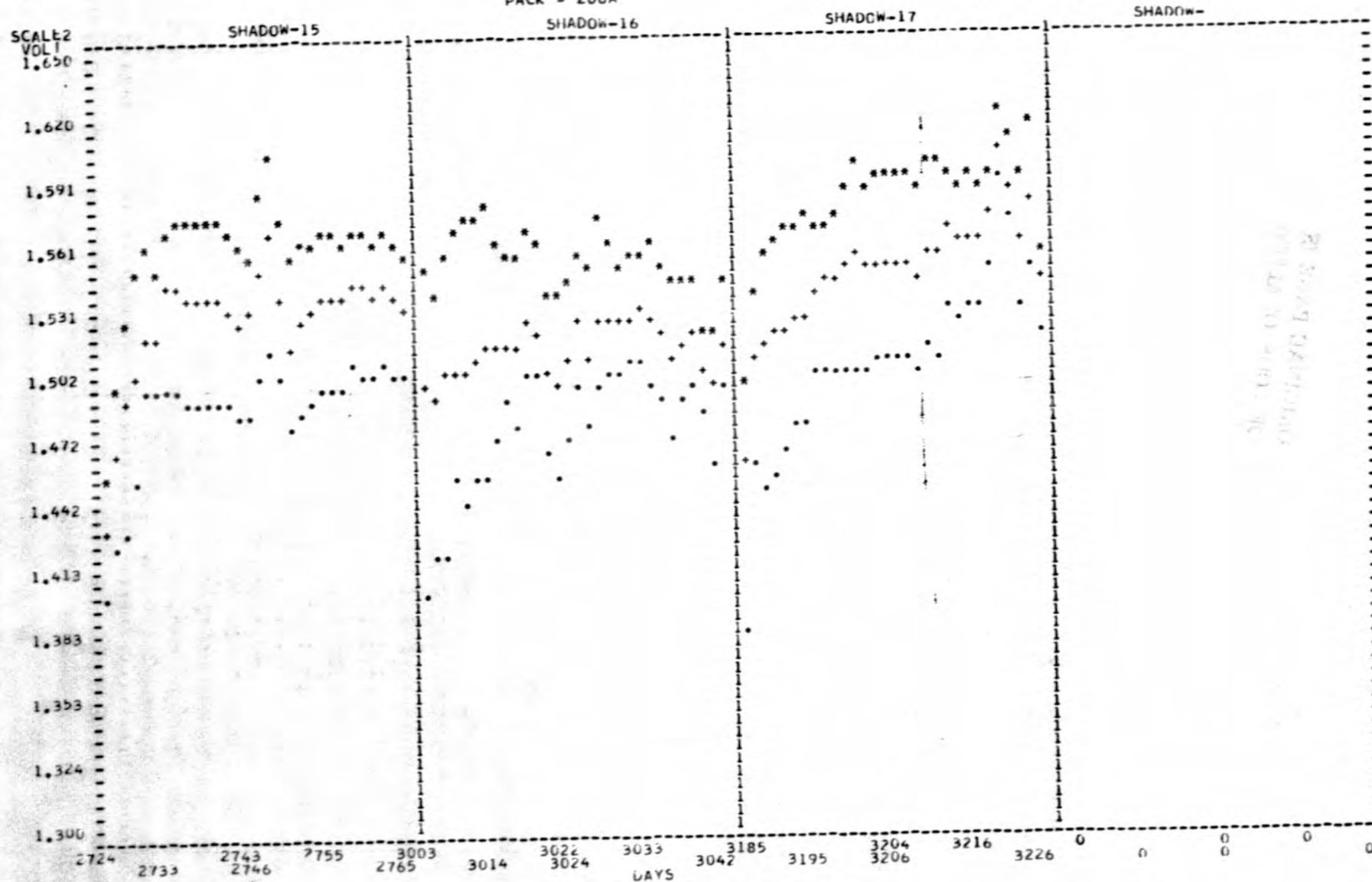


NOTE: (1) Cell 4 failed during Shadow 4.
 (2) Cell 5 failed during Shadow 11.

FIGURE 45

WDEC/C 77-134

PACK = 206A



NOTE: (1) Cell 4 failed during Shadow 4.
(2) Cell 5 failed during Shadow 11.

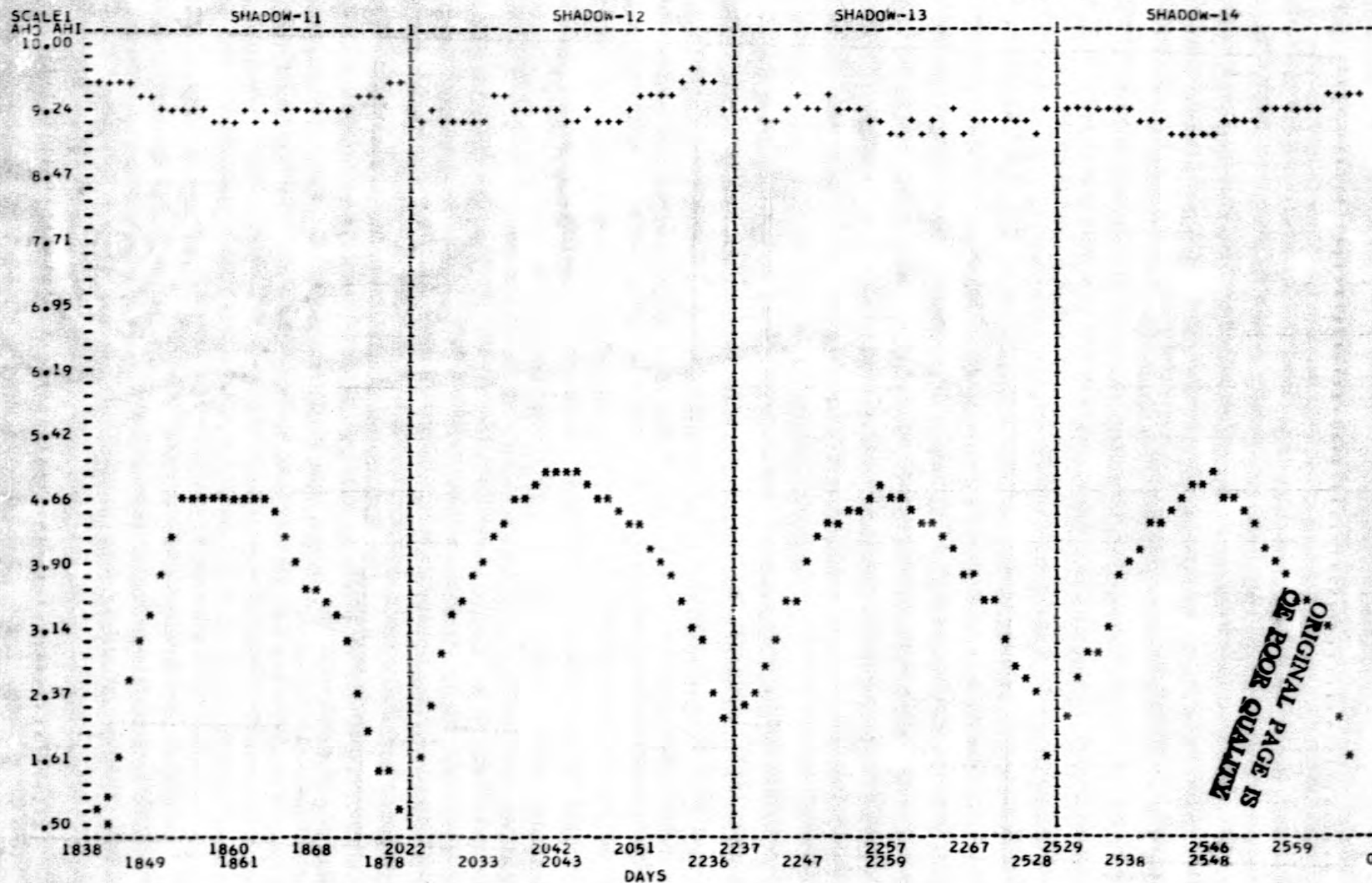
FIGURE 46

KEY
 * AHO
 * AHI-TOTAL

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 80
 TEMPERATURE 00
 AMPERE RATE 06
 SERIAL 6-6-6-9-11-15-11-37-11-39
 GENERAL ELECTRIC CFLS
 WOEC/C 77-134

PACK = 206A



NOTE: (1) Cell 4 failed during Shadow 4.
 (2) Cell 5 failed during Shadow 11.

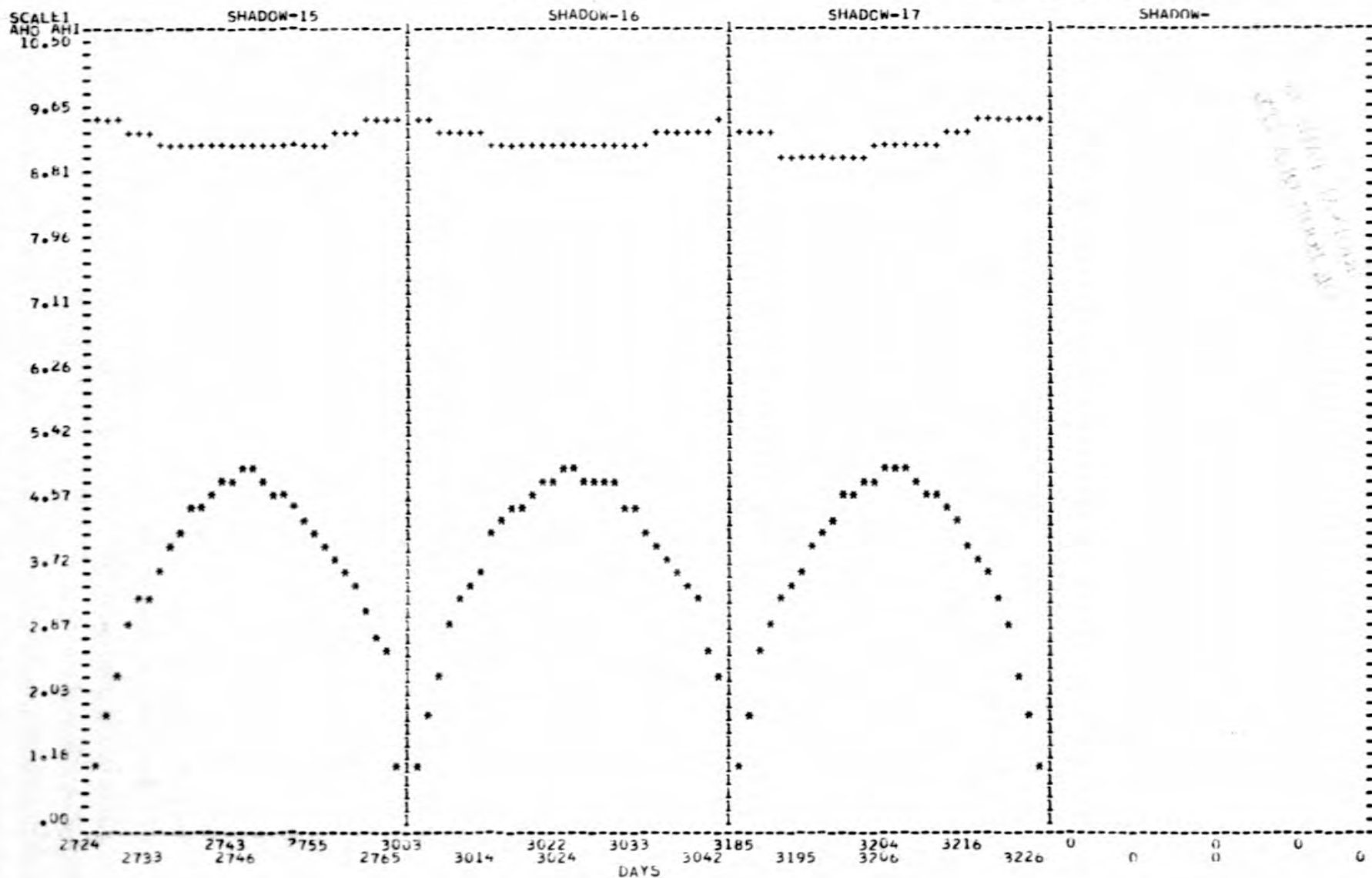
FIGURE 47

KEY
 * AHU
 + AH1-TOTAL

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 80
 TEMPERATURE 00
 AMPERE RATE 06
 SERIAL 6-8,6-9,11-15,11-37,11-39
 GENERAL ELECTRIC CELLS
 WQEC/C 77-134

PACK = 206A



NOTE: (1) Cell 4 failed during Shadow 4.
 (2) Cell 5 failed during Shadow 11.

FIGURE 48

DATE OF RUN	IS	06/27/76	AVE-DIS	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AHU	AHI
PACK DAY	HIGH-DIS		15 16 17						
PACK = 206A	SHADOW =								
206A 2724.	1.205	1.185	1.154	1.457	1.431	1.398	1.960	9.500	
206A 2725.	1.186	1.148	1.083	1.497	1.463	1.423	1.640	9.450	
206A 2726.	1.161	1.115	1.036	1.523	1.488	1.433	2.141	9.400	
206A 2728.	1.146	1.099	1.011	1.549	1.504	1.453	2.798	9.300	
206A 2729.	1.141	1.093	1.003	1.561	1.518	1.494	3.130	9.300	
206A 2730.	1.150	1.089	1.084	1.552	1.522	1.493	3.288	9.300	
206A 2733.	1.140	1.064	1.060	1.568	1.541	1.498	3.600	9.200	
206A 2734.	1.141	1.062	1.057	1.573	1.543	1.493	3.942	9.200	
206A 2735.	1.137	1.055	1.049	1.573	1.539	1.489	4.097	9.170	
206A 2737.	1.124	1.037	1.028	1.572	1.538	1.489	4.414	9.160	
206A 2738.	1.128	1.039	1.028	1.571	1.538	1.492	4.427	9.140	
206A 2740.	1.120	1.028	1.009	1.570	1.536	1.487	4.597	9.130	
206A 2741.	1.100	1.009	1.005	1.565	1.529	1.487	4.695	9.120	
206A 2742.	1.084	1.009	1.005	1.560	1.526	1.486	4.756	9.110	
206A 2743.	1.067	1.009	1.005	1.555	1.529	1.485	4.926	9.100	
206A 2746.	1.059	1.009	1.005	1.582	1.547	1.500	4.898	9.090	
206A 2747.	1.078	1.009	1.005	1.600	1.565	1.511	4.725	9.100	
206A 2749.	1.104	1.012	1.012	1.570	1.540	1.500	4.574	9.110	
206A 2750.	1.120	1.038	1.038	1.557	1.511	1.475	4.490	9.120	
206A 2751.	1.108	1.004	1.000	1.560	1.523	1.485	4.397	9.140	
206A 2753.	1.140	1.050	1.010	1.560	1.533	1.492	4.236	9.160	
206A 2754.	1.156	1.065	1.005	1.567	1.537	1.497	4.083	9.180	
206A 2755.	1.173	1.089	1.005	1.566	1.537	1.495	3.909	9.200	
206A 2756.	1.173	1.092	1.005	1.561	1.535	1.496	3.750	9.300	
206A 2757.	1.176	1.098	1.005	1.566	1.541	1.505	3.576	9.300	
206A 2758.	1.176	1.101	1.005	1.565	1.540	1.504	3.427	9.300	
206A 2760.	1.182	1.110	1.005	1.562	1.539	1.501	3.112	9.400	
206A 2761.	1.192	1.124	1.011	1.569	1.542	1.506	2.770	9.450	
206A 2762.	1.199	1.133	1.025	1.562	1.536	1.504	2.450	9.500	
206A 2765.	1.229	1.199	1.156	1.554	1.532	1.503	.989	9.500	
206A 3003.	1.218	1.200	1.183	1.550	1.497	1.400	.960	9.500	
206A 3004.	1.216	1.184	1.153	1.537	1.491	1.420	1.640	9.450	
206A 3005.	1.207	1.166	1.118	1.555	1.501	1.419	2.130	9.390	
206A 3007.	1.190	1.133	1.045	1.567	1.501	1.456	2.800	9.330	
206A 3009.	1.200	1.128	1.018	1.570	1.504	1.443	3.280	9.280	
206A 3010.	1.186	1.118	1.002	1.575	1.506	1.456	3.430	9.260	
206A 3011.	1.176	1.107	1.002	1.577	1.512	1.452	3.600	9.260	
206A 3014.	1.157	1.080	1.002	1.561	1.511	1.471	4.100	9.200	
206A 3015.	1.164	1.088	1.002	1.553	1.512	1.487	4.300	9.180	
206A 3016.	1.179	1.093	1.002	1.558	1.514	1.480	4.430	9.170	
206A 3017.	1.172	1.086	1.002	1.566	1.523	1.500	4.430	9.160	
206A 3019.	1.163	1.069	1.002	1.562	1.520	1.499	4.600	9.140	
206A 3020.	1.154	1.049	1.002	1.557	1.500	1.466	4.760	9.140	
206A 3021.	1.162	1.065	1.002	1.540	1.496	1.456	4.750	9.130	
206A 3022.	1.152	1.037	1.002	1.545	1.505	1.472	4.900	9.120	
206A 3024.	1.207	1.130	1.082	1.554	1.527	1.493	4.900	9.140	
206A 3025.	1.160	1.061	1.067	1.549	1.505	1.479	4.800	9.150	
206A 3026.	1.160	1.061	1.067	1.572	1.524	1.495	4.760	9.180	
206A 3027.	1.160	1.052	1.060	1.560	1.528	1.500	4.750	9.170	
206A 3029.	1.165	1.063	1.060	1.551	1.526	1.502	4.710	9.180	
206A 3030.	1.177	1.066	1.061	1.557	1.527	1.505	4.420	9.180	
206A 3031.	1.172	1.068	1.063	1.558	1.531	1.508	4.400	9.190	
206A 3033.	1.178	1.088	1.092	1.559	1.528	1.498	4.090	9.220	
206A 3034.	1.181	1.094	1.092	1.550	1.517	1.490	3.910	9.250	
206A 3035.	1.184	1.102	1.092	1.543	1.508	1.472	3.760	9.260	
206A 3036.	1.186	1.103	1.090	1.546	1.516	1.489	3.590	9.280	
206A 3037.	1.186	1.107	1.093	1.544	1.517	1.495	3.450	9.290	
206A 3038.	1.192	1.114	1.090	1.520	1.504	1.483	3.270	9.330	

WQEC/C 77-134

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DATE OF RUN	IS 08/27/76	AVE-DIS	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AHU	AH1
PACK	DAY	HIGH-DIS						
206A	041.	1.207	1.140	1.517	1.493	1.461	2.470	9.350
206A	042.	1.214	1.151	1.544	1.515	1.496	2.120	9.500
206A	043.	1.194	1.174	1.498	1.459	1.383	1.076	9.378
206A	044.	1.183	1.139	1.537	1.505	1.462	1.644	9.330
206A	045.	1.173	1.115	1.556	1.514	1.449	2.474	9.319
206A	046.	1.165	1.105	1.560	1.518	1.456	2.794	9.269
206A	047.	1.161	1.099	1.565	1.521	1.469	3.281	8.994
206A	048.	1.154	1.090	1.567	1.525	1.475	3.446	8.947
206A	049.	1.151	1.084	1.570	1.524	1.477	3.613	8.966
206A	050.	1.148	1.073	1.564	1.538	1.502	3.954	8.940
206A	051.	1.147	1.071	1.571	1.542	1.502	4.106	8.926
206A	052.	1.137	1.052	1.585	1.547	1.502	4.268	8.900
206A	053.	1.136	1.043	1.596	1.554	1.502	4.499	8.900
206A	054.	1.135	1.032	1.582	1.547	1.503	4.614	8.900
206A	055.	1.134	1.021	1.591	1.552	1.510	4.771	8.900
206A	056.	1.133	1.010	1.592	1.549	1.508	4.931	9.060
206A	057.	1.132	1.007	1.593	1.549	1.508	4.945	9.106
206A	058.	1.131	1.004	1.594	1.549	1.508	4.976	9.107
206A	059.	1.130	1.003	1.595	1.549	1.508	4.997	9.103
206A	060.	1.129	1.002	1.596	1.549	1.508	4.997	9.100
206A	061.	1.128	1.001	1.597	1.549	1.508	4.997	9.108
206A	062.	1.127	1.000	1.598	1.549	1.508	4.997	9.260
206A	063.	1.126	1.000	1.599	1.549	1.508	4.997	9.303
206A	064.	1.125	1.000	1.600	1.549	1.508	4.997	9.377
206A	065.	1.124	1.000	1.601	1.549	1.508	4.997	9.399
206A	066.	1.123	1.000	1.602	1.549	1.508	4.997	9.470
206A	067.	1.122	1.000	1.603	1.549	1.508	4.997	9.530
206A	068.	1.121	1.000	1.604	1.549	1.508	4.997	9.560
206A	069.	1.120	1.000	1.605	1.549	1.508	4.997	9.500
206A	070.	1.119	1.000	1.606	1.549	1.508	4.997	9.500
206A	071.	1.118	1.000	1.607	1.549	1.508	4.997	9.500
206A	072.	1.117	1.000	1.608	1.549	1.508	4.997	9.500
206A	073.	1.116	1.000	1.609	1.549	1.508	4.997	9.500
206A	074.	1.115	1.000	1.610	1.549	1.508	4.997	9.500
206A	075.	1.114	1.000	1.611	1.549	1.508	4.997	9.500
206A	076.	1.113	1.000	1.612	1.549	1.508	4.997	9.500
206A	077.	1.112	1.000	1.613	1.549	1.508	4.997	9.500
206A	078.	1.111	1.000	1.614	1.549	1.508	4.997	9.500
206A	079.	1.110	1.000	1.615	1.549	1.508	4.997	9.500
206A	080.	1.109	1.000	1.616	1.549	1.508	4.997	9.500
206A	081.	1.108	1.000	1.617	1.549	1.508	4.997	9.500
206A	082.	1.107	1.000	1.618	1.549	1.508	4.997	9.500
206A	083.	1.106	1.000	1.619	1.549	1.508	4.997	9.500
206A	084.	1.105	1.000	1.620	1.549	1.508	4.997	9.500
206A	085.	1.104	1.000	1.621	1.549	1.508	4.997	9.500
206A	086.	1.103	1.000	1.622	1.549	1.508	4.997	9.500
206A	087.	1.102	1.000	1.623	1.549	1.508	4.997	9.500
206A	088.	1.101	1.000	1.624	1.549	1.508	4.997	9.500
206A	089.	1.100	1.000	1.625	1.549	1.508	4.997	9.500
206A	090.	1.099	1.000	1.626	1.549	1.508	4.997	9.500
206A	091.	1.098	1.000	1.627	1.549	1.508	4.997	9.500
206A	092.	1.097	1.000	1.628	1.549	1.508	4.997	9.500
206A	093.	1.096	1.000	1.629	1.549	1.508	4.997	9.500
206A	094.	1.095	1.000	1.630	1.549	1.508	4.997	9.500
206A	095.	1.094	1.000	1.631	1.549	1.508	4.997	9.500
206A	096.	1.093	1.000	1.632	1.549	1.508	4.997	9.500
206A	097.	1.092	1.000	1.633	1.549	1.508	4.997	9.500
206A	098.	1.091	1.000	1.634	1.549	1.508	4.997	9.500
206A	099.	1.090	1.000	1.635	1.549	1.508	4.997	9.500
206A	100.	1.089	1.000	1.636	1.549	1.508	4.997	9.500
206A	101.	1.088	1.000	1.637	1.549	1.508	4.997	9.500
206A	102.	1.087	1.000	1.638	1.549	1.508	4.997	9.500
206A	103.	1.086	1.000	1.639	1.549	1.508	4.997	9.500
206A	104.	1.085	1.000	1.640	1.549	1.508	4.997	9.500
206A	105.	1.084	1.000	1.641	1.549	1.508	4.997	9.500
206A	106.	1.083	1.000	1.642	1.549	1.508	4.997	9.500
206A	107.	1.082	1.000	1.643	1.549	1.508	4.997	9.500
206A	108.	1.081	1.000	1.644	1.549	1.508	4.997	9.500
206A	109.	1.080	1.000	1.645	1.549	1.508	4.997	9.500
206A	110.	1.079	1.000	1.646	1.549	1.508	4.997	9.500
206A	111.	1.078	1.000	1.647	1.549	1.508	4.997	9.500
206A	112.	1.077	1.000	1.648	1.549	1.508	4.997	9.500
206A	113.	1.076	1.000	1.649	1.549	1.508	4.997	9.500
206A	114.	1.075	1.000	1.650	1.549	1.508	4.997	9.500
206A	115.	1.074	1.000	1.651	1.549	1.508	4.997	9.500
206A	116.	1.073	1.000	1.652	1.549	1.508	4.997	9.500
206A	117.	1.072	1.000	1.653	1.549	1.508	4.997	9.500
206A	118.	1.071	1.000	1.654	1.549	1.508	4.997	9.500
206A	119.	1.070	1.000	1.655	1.549	1.508	4.997	9.500
206A	120.	1.069	1.000	1.656	1.549	1.508	4.997	9.500
206A	121.	1.068	1.000	1.657	1.549	1.508	4.997	9.500
206A	122.	1.067	1.000	1.658	1.549	1.508	4.997	9.500
206A	123.	1.066	1.000	1.659	1.549	1.508	4.997	9.500
206A	124.	1.065	1.000	1.660	1.549	1.508	4.997	9.500
206A	125.	1.064	1.000	1.661	1.549	1.508	4.997	9.500
206A	126.	1.063	1.000	1.662	1.549	1.508	4.997	9.500
206A	127.	1.062	1.000	1.663	1.549	1.508	4.997	9.500
206A	128.	1.061	1.000	1.664	1.549	1.508	4.997	9.500
206A	129.	1.060	1.000	1.665	1.549	1.508	4.997	9.500
206A	130.	1.059	1.000	1.666	1.549	1.508	4.997	9.500
206A	131.	1.058	1.000	1.667	1.549	1.508	4.997	9.500
206A	132.	1.057	1.000	1.668	1.549	1.508	4.997	9.500
206A	133.	1.056	1.000	1.669	1.549	1.508	4.997	9.500
206A	134.	1.055	1.000	1.670	1.549	1.508	4.997	9.500
206A	135.	1.054	1.000	1.671	1.549	1.508	4.997	9.500
206A	136.	1.053	1.000	1.672	1.549	1.508	4.997	9.500
206A	137.	1.052	1.000	1.673	1.549	1.508	4.997	9.500
206A	138.	1.051	1.000	1.674	1.549	1.508	4.997	9.500
206A	139.	1.050	1.000	1.675	1.549	1.508	4.997	9.500
206A	140.	1.049	1.000	1.676	1.549	1.508	4.997	9.500
206A	141.	1.048	1.000	1.677	1.549	1.508	4.997	9.500
206A	142.	1.047	1.000	1.678	1.549	1.508	4.997	9.500
206A	143.	1.046	1.000	1.679	1.549	1.508	4.997	9.500
206A	144.	1.045	1.000	1.680	1.549	1.508	4.997	9.500
206A	145.	1.044	1.000	1.681	1.549	1.508	4.997	9.500
206A	146.	1.043	1.000	1.682	1.549	1.508	4.997	9.500
206A	147.	1.042	1.000	1.683	1.549	1.508	4.997	9.500
206A	148.	1.041	1.000	1.684	1.549	1.508	4.997	9.500
206A	149.	1.040	1.000	1.685	1.549	1.508	4.997	9.500
206A	150.	1.039	1.000	1.686	1.549	1.508	4.997	9.500
206A	151.	1.038	1.000	1.687	1.549	1.508	4.997	9.500
206A	152.	1.037	1.000	1.688	1.549	1.508	4.997	9.500
206A	153.	1.036	1.000	1.689	1.549	1.508	4.997	9.500
206A	154.	1.035	1.000	1.690	1.549	1.508	4.997	9.500
206A	155.	1.034	1.000	1.691	1.549	1.508	4.997	9.500
206A	156.	1.033	1.000	1.692	1.549	1.508	4.997	9.500
206A	157.	1.032	1.000	1.693	1.549	1.508	4.997	9.500
206A	158.	1.031	1.000	1.694	1.549	1.508	4.997	9.500</

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PACK	DAY	HIGH-DIS SHADOW	AVE-DIS	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AHU	AHI
206A	206A	1.194	1.194	1.162	1.467	1.440	1.387	1.934	9.540
206A	206A	1.204	1.171	1.124	1.467	1.440	1.387	1.191	9.540
206A	206A	1.204	1.171	1.124	1.467	1.473	1.387	1.656	9.549
206A	206A	1.202	1.118	1.086	1.494	1.495	1.396	2.458	9.525
206A	206A	1.202	1.092	1.055	1.524	1.515	1.504	2.909	9.423
206A	206A	1.182	1.026	1.063	1.537	1.537	1.509	3.268	9.354
206A	206A	1.177	1.076	1.042	1.494	1.398	1.477	3.818	9.200
206A	206A	1.165	1.123	1.048	1.522	1.502	1.477	4.217	9.200
206A	206A	1.153	1.111	1.040	1.484	1.468	1.451	4.675	9.200
206A	206A	1.152	1.115	1.035	1.518	1.503	1.480	4.630	9.232
206A	206A	1.149	1.096	1.066	1.539	1.517	1.492	4.615	9.179
206A	206A	1.148	1.096	1.062	1.529	1.512	1.488	4.650	9.120
206A	206A	1.151	1.094	1.057	1.530	1.510	1.482	4.643	9.120
206A	206A	1.179	1.120	1.013	1.533	1.514	1.493	4.620	9.120
206A	206A	1.185	1.100	1.069	1.531	1.504	1.479	4.701	9.177
206A	206A	1.186	1.088	1.050	1.541	1.511	1.483	4.641	9.120
206A	206A	1.186	1.092	1.057	1.531	1.525	1.502	4.640	9.166
206A	206A	1.186	1.117	1.008	1.541	1.520	1.495	4.500	9.160
206A	206A	1.186	1.111	1.093	1.537	1.510	1.492	4.208	9.163
206A	206A	1.186	1.120	1.009	1.530	1.508	1.485	4.947	9.200
206A	206A	1.186	1.121	1.012	1.528	1.507	1.482	4.577	9.217
206A	206A	1.187	1.120	1.043	1.523	1.507	1.486	4.577	9.200
206A	206A	1.187	1.136	1.053	1.527	1.508	1.486	4.389	9.300
206A	206A	1.187	1.136	1.043	1.544	1.521	1.499	4.283	9.300
206A	206A	1.187	1.149	1.090	1.538	1.519	1.497	4.947	9.300
206A	206A	1.197	1.127	1.027	1.529	1.511	1.489	4.420	9.400
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	1.930	9.400
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	4.279	9.400
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	4.470	9.451
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	1.934	9.521
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	1.630	9.100
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	1.100	9.100
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	2.770	9.100
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	3.300	9.100
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	4.20	9.030
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	3.760	9.100
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	3.920	9.100
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	4.270	9.350
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	4.430	9.430
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	4.600	9.230
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	4.590	9.180
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	4.750	9.230
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	4.910	9.270
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	4.910	9.270
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	4.930	9.130
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	4.940	9.140
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	4.760	9.170
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	4.600	9.120
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	4.590	9.110
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	4.440	9.140
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	4.300	9.180
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	4.280	9.330
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	4.120	9.320
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	3.960	9.330
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	3.700	9.400
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	3.420	9.610
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	3.120	9.620
206A	206A	1.187	1.149	1.027	1.520	1.504	1.489	3.000	9.610

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PACK	DAY	HIGH-DIS	AVE-DIS	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AHO	AHI
206A	2	11	40	022	580	524	458	2400	9600
206A	3	11	76	130	525	491	437	2000	9200
206A	4	11	69	130	523	491	438	2200	9200
206A	5	11	53	101	540	503	438	2400	9200
206A	6	11	53	067	564	513	438	2700	9100
206A	7	11	53	033	563	525	443	3000	9100
206A	8	11	53	004	563	526	440	3400	9300
206A	9	11	07	002	563	527	453	3500	9400
206A	10	11	03	992	563	521	442	3900	9200
206A	11	11	09	968	563	519	443	4200	9200
206A	12	11	08	930	563	515	433	4300	9400
206A	13	11	08	942	563	516	442	4400	9300
206A	14	11	07	931	563	523	464	4500	9200
206A	15	11	07	930	563	504	449	4500	9200
206A	16	11	06	928	563	525	462	4600	9100
206A	17	11	05	913	563	502	469	4800	9100
206A	18	11	05	892	563	513	461	4700	9000
206A	19	11	06	884	563	527	457	4600	9000
206A	20	11	06	885	563	522	455	4500	9100
206A	21	11	06	885	563	530	483	4300	9000
206A	22	11	03	943	560	524	470	4300	9100
206A	23	11	01	946	559	515	455	4200	9000
206A	24	11	05	956	564	514	442	4000	9200
206A	25	11	09	965	567	515	441	3800	9000
206A	26	11	12	973	567	513	438	3700	9100
206A	27	11	17	988	565	513	440	3500	9100
206A	28	11	19	988	565	512	429	3400	9100
206A	29	11	27	993	565	512	425	3300	9100
206A	30	11	39	993	565	485	428	3300	9100
206A	31	11	40	993	565	488	428	3300	9100
206A	32	11	41	993	565	487	428	3300	9100
206A	33	11	36	993	565	482	428	3300	9100
206A	34	11	18	993	565	487	428	3300	9100
206A	35	11	03	993	565	482	428	3300	9100
206A	36	11	01	993	565	493	440	3300	9100
206A	37	11	02	993	565	506	453	3300	9100
206A	38	11	08	970	565	503	448	3300	9100
206A	39	11	08	959	565	502	442	3300	9100
206A	40	11	07	949	565	497	449	3300	9100
206A	41	11	06	939	565	515	460	3300	9100
206A	42	11	06	928	565	538	470	3300	9100
206A	43	11	04	908	565	550	484	3300	9100
206A	44	11	05	900	565	543	486	3300	9100
206A	45	11	04	890	565	549	490	3300	9100
206A	46	11	03	886	565	546	493	3300	9100
206A	47	11	02	861	565	543	491	3300	9100
206A	48	11	02	841	565	544	494	3300	9100
206A	49	11	00	879	565	548	502	3300	9100
206A	50	11	00	853	565	539	495	3300	9100
206A	51	11	03	874	565	545	503	3300	9100
206A	52	11	06	900	565	535	497	3300	9100
206A	53	11	08	939	565	534	497	3300	9100
206A	54	11	09	949	565	534	497	3300	9100
206A	55	11	10	965	565	534	497	3300	9100
206A	56	11	11	973	565	534	497	3300	9100
206A	57	11	11	982	565	534	497	3300	9100
206A	58	11	11	992	565	534	497	3300	9100
206A	59	11	12	1000	565	534	497	3300	9100
206A	60	11	13	1020	565	534	497	3300	9100

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PACK	DAY	HIGH-DIS	AVE-DIS	LOW-DIS	HIGH-CHAR	AVE-CHAR	LOW-CHAR	AMO	AHI
206A	256B	1.218	1.174	1.098	1.552	1.532	1.499	1.800	9.400
206B	256C	1.233	1.206	1.165	1.551	1.537	1.514	1.900	
206C	256D	1.271	1.25000	1.20000	.59500	128.50000			

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*** OUT OF RANGE ARGUMENT TO IFIX

2	.00000	.00000	9999.00000	15.00000
3	.00847	1.65000	1.20600	182.20000
4	.15254	10.00000	.90000	98.70000

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C. GE 12.0 ah (Prototype-ATS F & G)

1. Pack 207 A, 5-cells

a. Cell information:

(1) The cells were purchased, and provided for test, by NASA, GSFC for the purpose of gathering performance information concerning sealed nickel-cadmium cells with auxiliary electrodes in synchronous orbit. The cells were placed on test to demonstrate the feasibility of using this type of cell design for the ATS F & G satellite in synchronous orbit. These cells began test on 22 March 1969. The cells were identified with the manufacturers catalog numbers 42B012AB09 (auxiliary electrode type) and 42B012AB10. Acceptance test results and detailed cell descriptions are contained in the NAD Crane QE/C 69-553 of 15 July 1969. The results of the first four eclipse seasons were reported in the NAD Crane Report QE/C 71-183 of 10 June 1971. Cell 1 was fitted with a pressure transducer prior to testing.

(2) One uncycled cell was sent to GSFC for analysis and the results are contained in Table III, Section VI.

b. Parameters:

Depth of Discharge (%)	60	Temperature (°C)	0
Charge Control	AE	Float/Trickle Current (amps)*	.15
Charge Current (amps)	1.5	Auxiliary Electrode **	
		Resistance (ohms)	300
Discharge Current (amps)	6.0	Trip Voltage (mv)	150

*--Reduced to .15 amps, from .20 amps, during sun period 10.

**--Cells 1, 4 and 5.

c. Capacity checks: (Discharge to .50 volts any cell)

	Cell 1	Cell 2	Cell 3	Cell 4	Cell 5	ah out
Shadow 5 (Figure 49)	.579	.951	.853	.670	.497	16.72
Shadow 6 (Figure 50)	.691	.919	.877	.493	.561	16.64
Shadow 7 (Figure 51)	.905	.942	.940	.435	.439	16.20
Shadow 8 (Figure 52)	.914	.959	.965	.580	.540	16.31
Shadow 9	-.20	1.160	1.164	1.100	1.110	11.43
Shadow 10 (Figure 53)	.207	1.176	1.177	1.160	1.162	4.13
Shadow 11	***	.842	.770	.557	.441	15.62
Shadow 12 (Figure 54)		.960	.947	.540	.411	14.39
Shadow 13 (Figure 55)		.952	.885	.465	.390	14.39
Shadow 14 (Figure 56)		.981	.948	.468	.410	13.18

***--Cell 1 leaking, removed prior to shadow 11.

d. Test results during Eclipse Seasons: (Figures 57 to 64)

(1) Erratic data, shown during shadow periods 9 and 10, is due to the "drying out" of cell 1. Its pressure transducer assembly was bumped, during the sun period prior to shadow 9, which caused the weld at the base of the fill tube to break. As a result of this, the cell exhibited low EOD voltages, unreliable pressure readings and high auxiliary electrode voltages at the beginning of charge, which did not allow the pack to get properly recharged. This cell was removed from the pack prior to the start of shadow period 11.

(2) Average End of Discharge Voltages: The reconditioning effect, due to the capacity checks, are still in evidence as the average voltage increased by 18 millivolts the day following the capacity check during shadow period 14.

(3) Average Cell Voltage at Trip and End of Charge: The averages at trip were lower than those at the end of charge, prior to period 11. During period 11, and the following periods, this was completely reversed. Also, the trip and end of charge voltages have increased each successive period. The trickle charge current was reduced from .2 to .15 ampere during shadow 11 in an effort to reduce the end-of-charge voltages. The trip voltages at the beginning of each shadow period are high, due to the auxiliary electrodes, during the sun periods, appearing to become "desensitized" to the oxygen produced during charge. The electrodes become "sensitized" again after 2 to 7 days into the period. During the period that the auxiliary electrodes are not functioning properly, the cells are placed on trickle charge when their voltages reach 1.70 volts on the high charge rate.

e. Performance during Sun Periods: The pack began test with a shadow period and has now completed 14 sun periods. Pressures, cell 1, were less than 12 psia prior to period 8 when its pressure assembly began leaking. The trickle current was reduced from .20 to .15 amperes, during period 10, in an effort to reduce the high cell voltages. Following is a listing of the high, average and low cell voltages at the start and end of sun periods 5 through 14.

SUN PERIODS

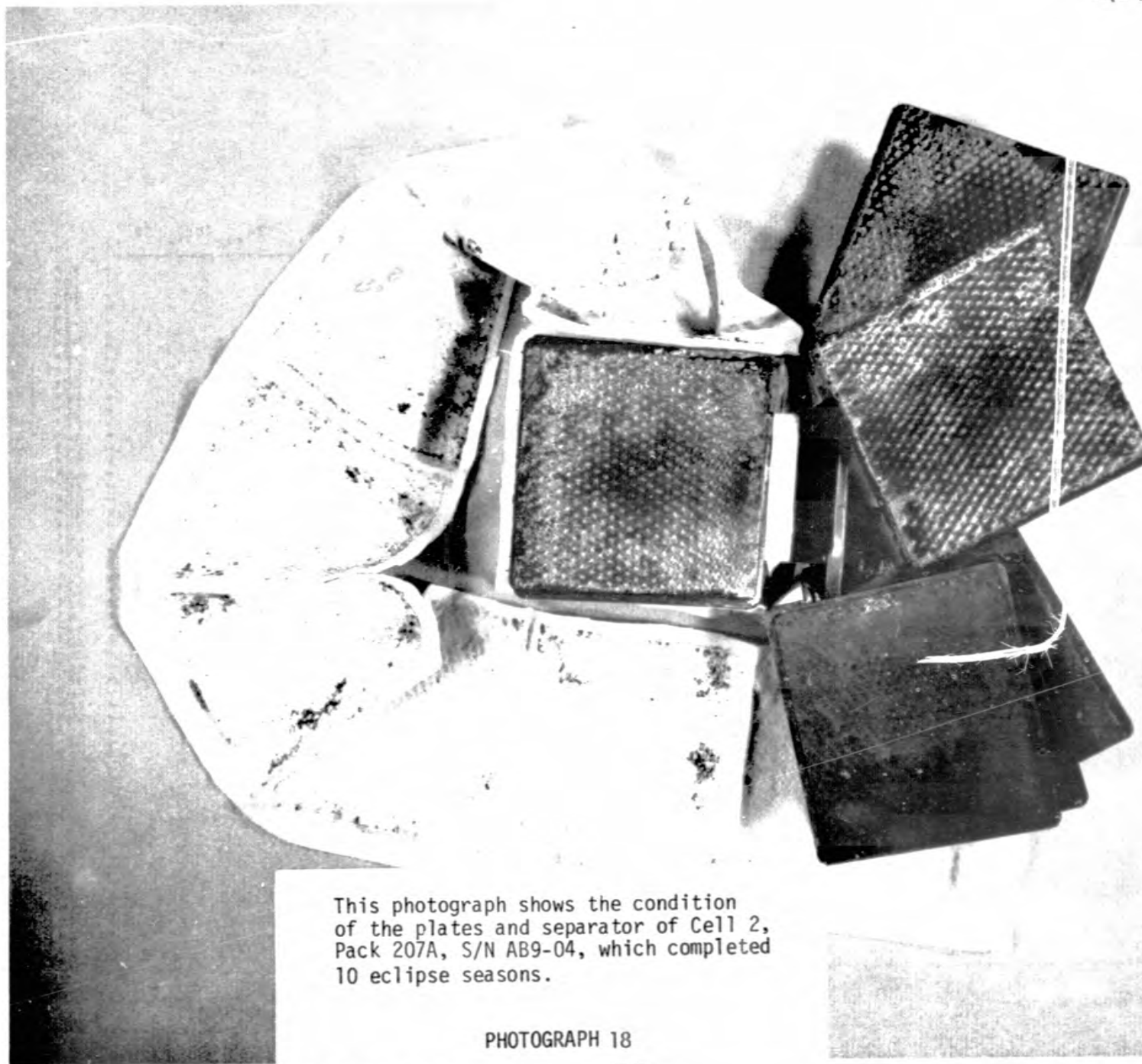
Voltages****	5		6		7		8	
	Start	End	Start	End	Start	End	Start	End
High	1.524(5)	1.532(4)	1.518(4)	1.538(4)	1.515(4)	1.547(4)	1.520(4)	1.555(4)
Average	1.503	1.536	1.495	1.532	1.491	1.525	1.506	1.514
Low	1.453(1)	1.475(1)	1.450(1)	1.472(1)	1.437(1)	1.467(1)	1.477(1)	1.438(1)
Voltages	9		10		11		12	
	Start	End	Start	End	Start	End	Start	End
High	1.568(4)	1.584(4,5)	1.580(5)	1.616(4)	1.599(4)	1.626(4)	1.604(4)	1.618(5)
Average	1.525	1.533	1.531	1.573	1.579	1.579	1.579	1.554
Low	1.444(1)	1.440(1)	1.429(1)	1.532(3)	1.560(2)	1.540(2)	1.555(2)	1.426(3)
Voltages	13		14					
	Start	End	Start	End				
High	1.613(3)	1.624(4)	1.579(4)	1.642(4)				
Average	1.605	1.525	1.564	1.593				
Low	1.589(5)	1.422(3)	1.555(2)	1.485(3)				

****--() Indicates which cell.

f. Cell Analysis: Cell 1 was sent to GSFC for analysis and the results are contained in Table III, Section VI. The following photograph shows the condition of the plates and separator of Cell 1 as it was opened at GSFC.

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This photograph shows the condition of the plates and separator of Cell 2, Pack 207A, S/N AB9-04, which completed 10 eclipse seasons.

PHOTOGRAPH 18

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KEY
 + HIGH CELL
 * LOW CELL
 * AVERAGE

PACK NUMBER IS 207A
 SHADOW PERIOD IS 5
 CYCLE NUMBER IS 750.
 DISCHARGE RATE IS 6.0

WQEC/C 77-134

AMPERE HOUR OUT

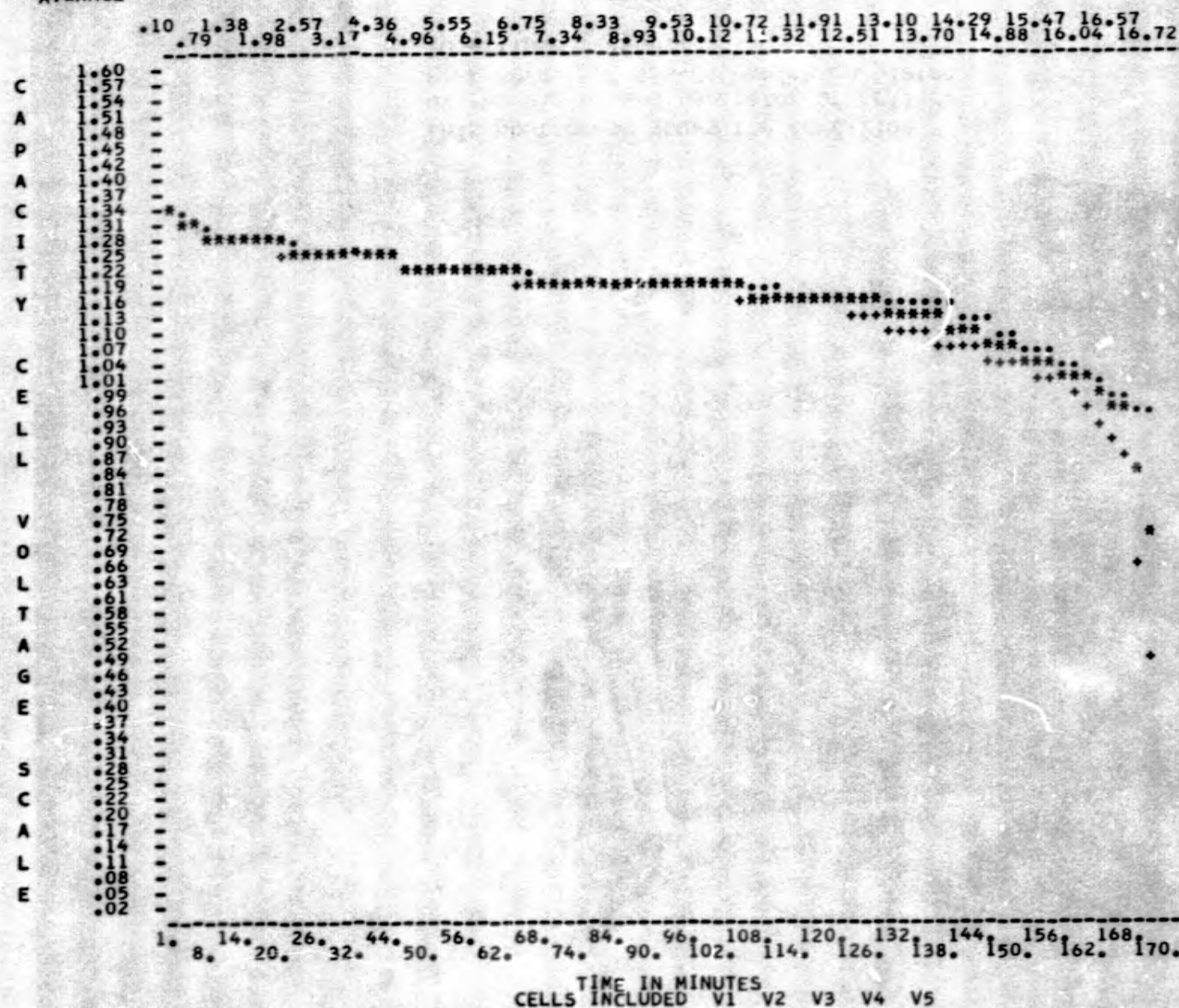


FIGURE 49

KEY
 * HIGH CELL
 * LOW CELL
 * AVERAGE

PACK NUMBER IS 207A
 SHADOW PERIOD IS 6
 CYCLE NUMBER IS 932.
 DISCHARGE RATE IS 6.

WQEC/C 77-134

AMPERE HOUR OUT

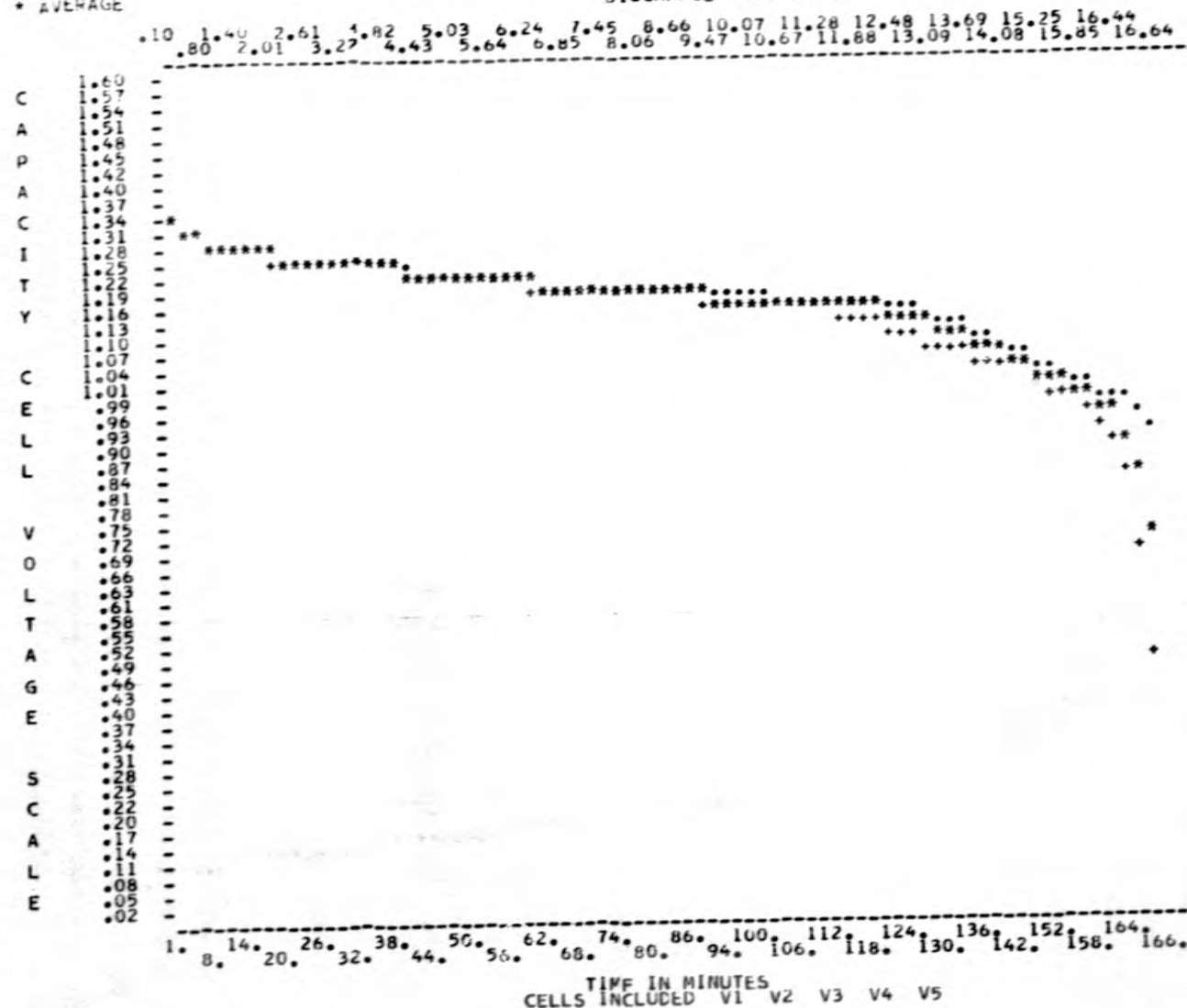


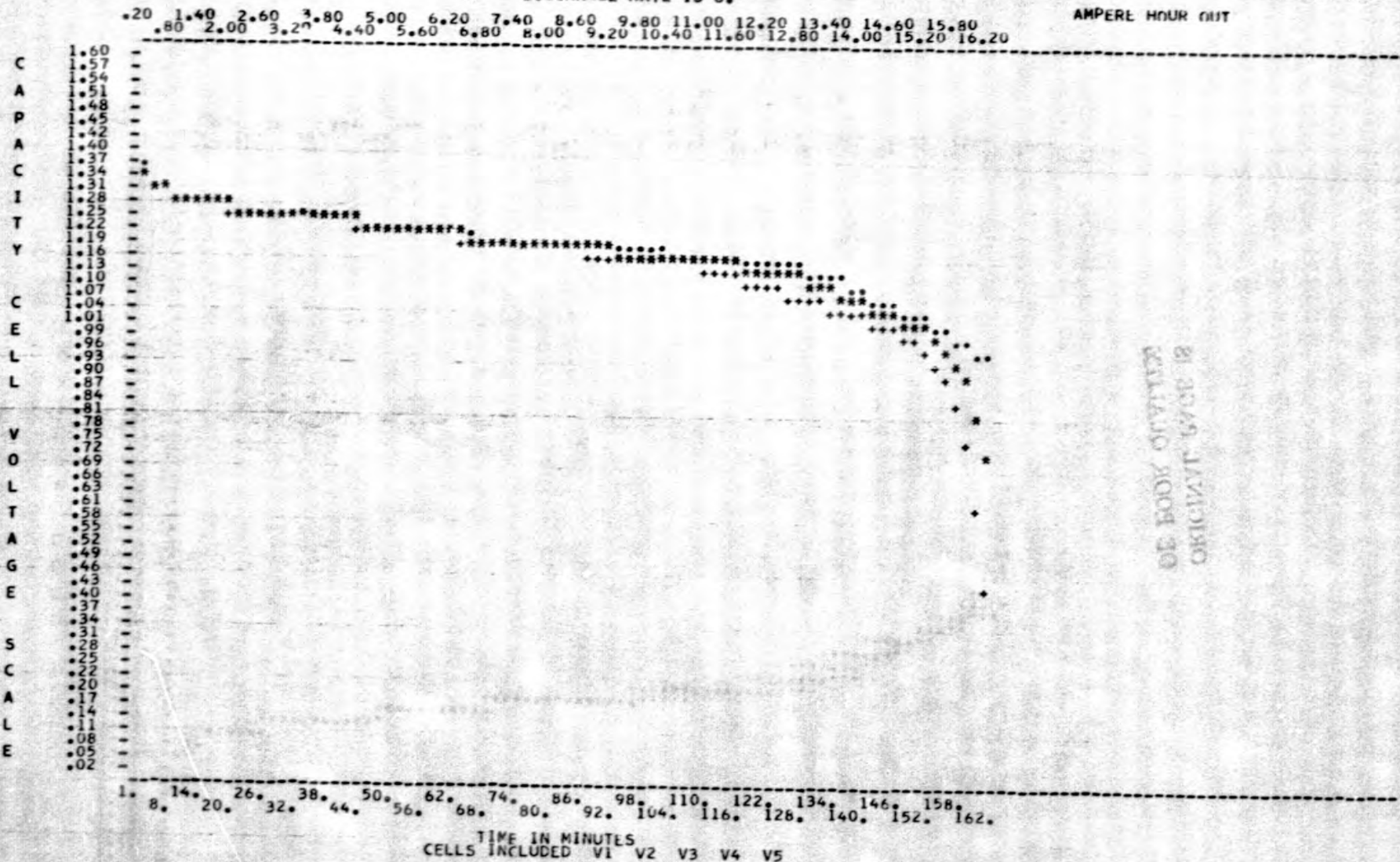
FIGURE 50

KEY
 * HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER 15 207A
 SHADOW PERIOD 15 7
 CYCLE NUMBER 15 1114.
 DISCHARGE RATE 15 6.

WQEC/C 77-134

AMPERE HOUR OUT



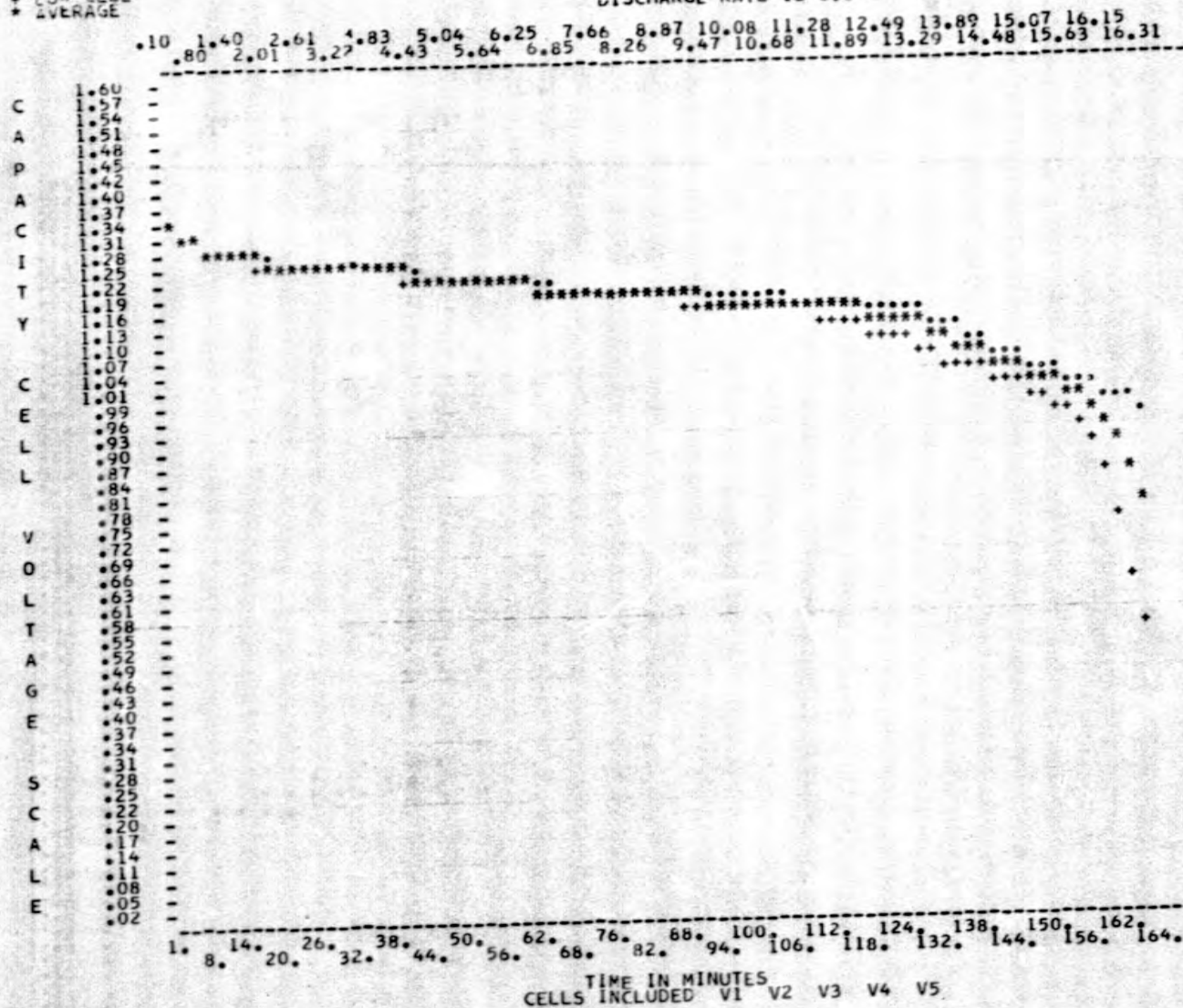
DE BOOK OFFICE
 ORIGINAL PAGE 12

FIGURE 51

KEY
 • HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 207A
 SHADOW PERIOD IS 8
 CYCLE NUMBER IS 1296
 DISCHARGE RATE IS 6.0

AMPERE HOUR OUT WQEC/C 77-134



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FIGURE 52

KEY
 • HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 207A
 SHADOW PERIOD IS 10
 CYCLE NUMBER IS 1635.
 DISCHARGE RATE IS 6.0

WQEC/C 77-134

AMPERE HOUR OUT

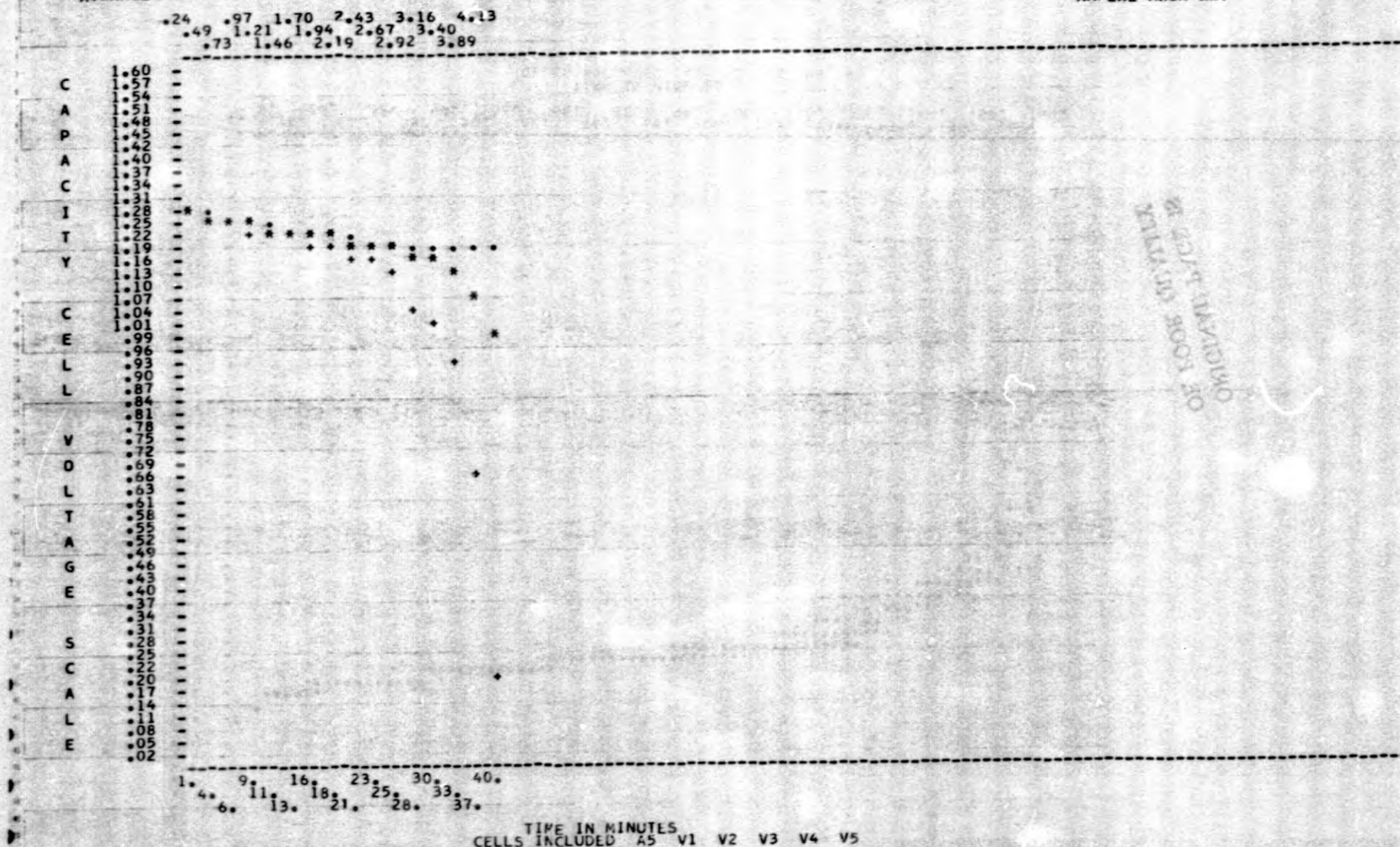


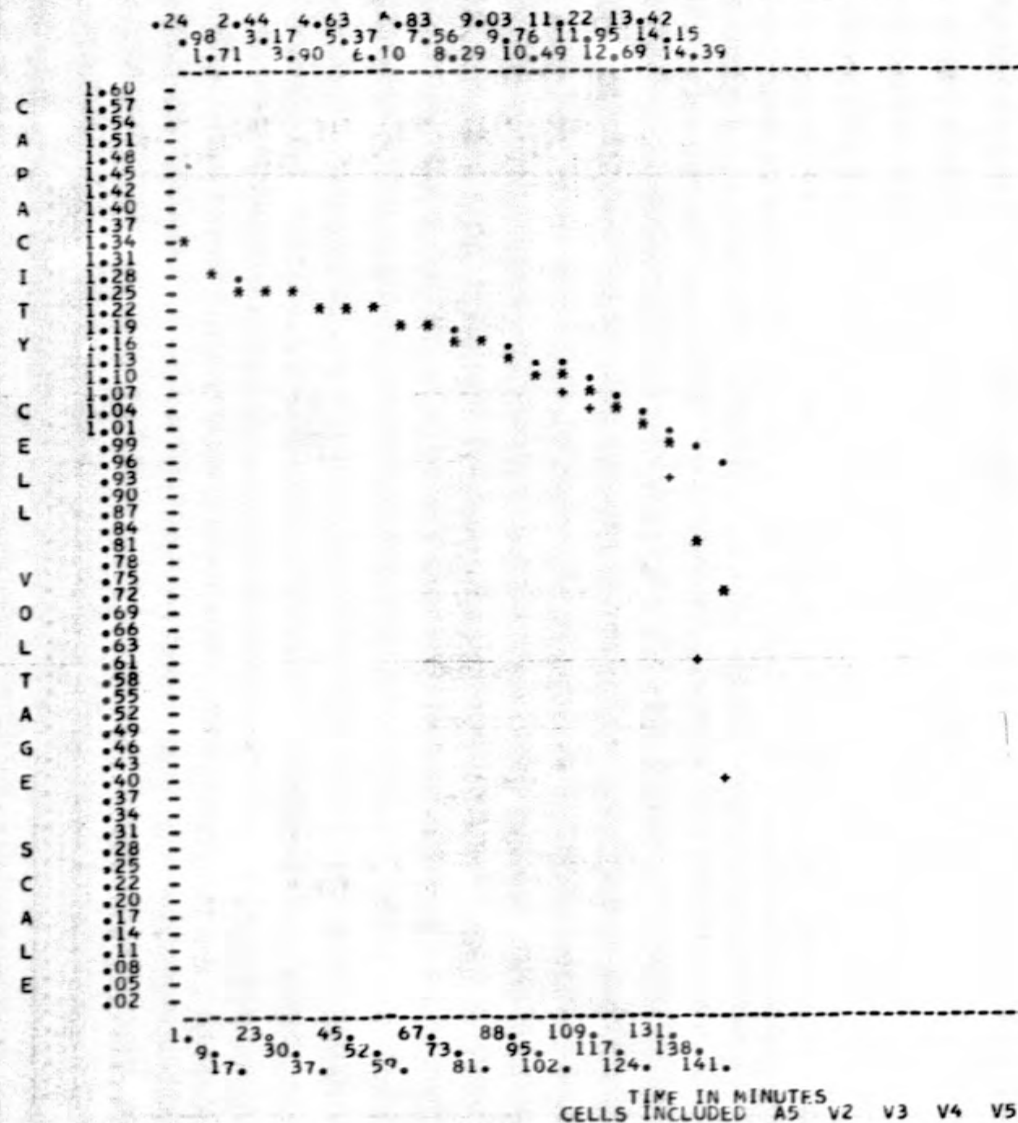
FIGURE 53

KEY
 • HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER 15 207A
 SHADOW PERIOD 15 12
 CYCLE NUMBER 15 2123.
 DISCHARGE RATE 15 6.0

AMPERE HOUR OUT

WQEC/C 77-134



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 OF 1000 QUALITY

FIGURE 54

KEY
 * HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 207A
 SHADOW PERIOD IS 13
 CYCLE NUMBER IS 2402.
 DISCHARGE RATE IS 6.0

AMPERE HOUR OUT WQEC/C 77-134

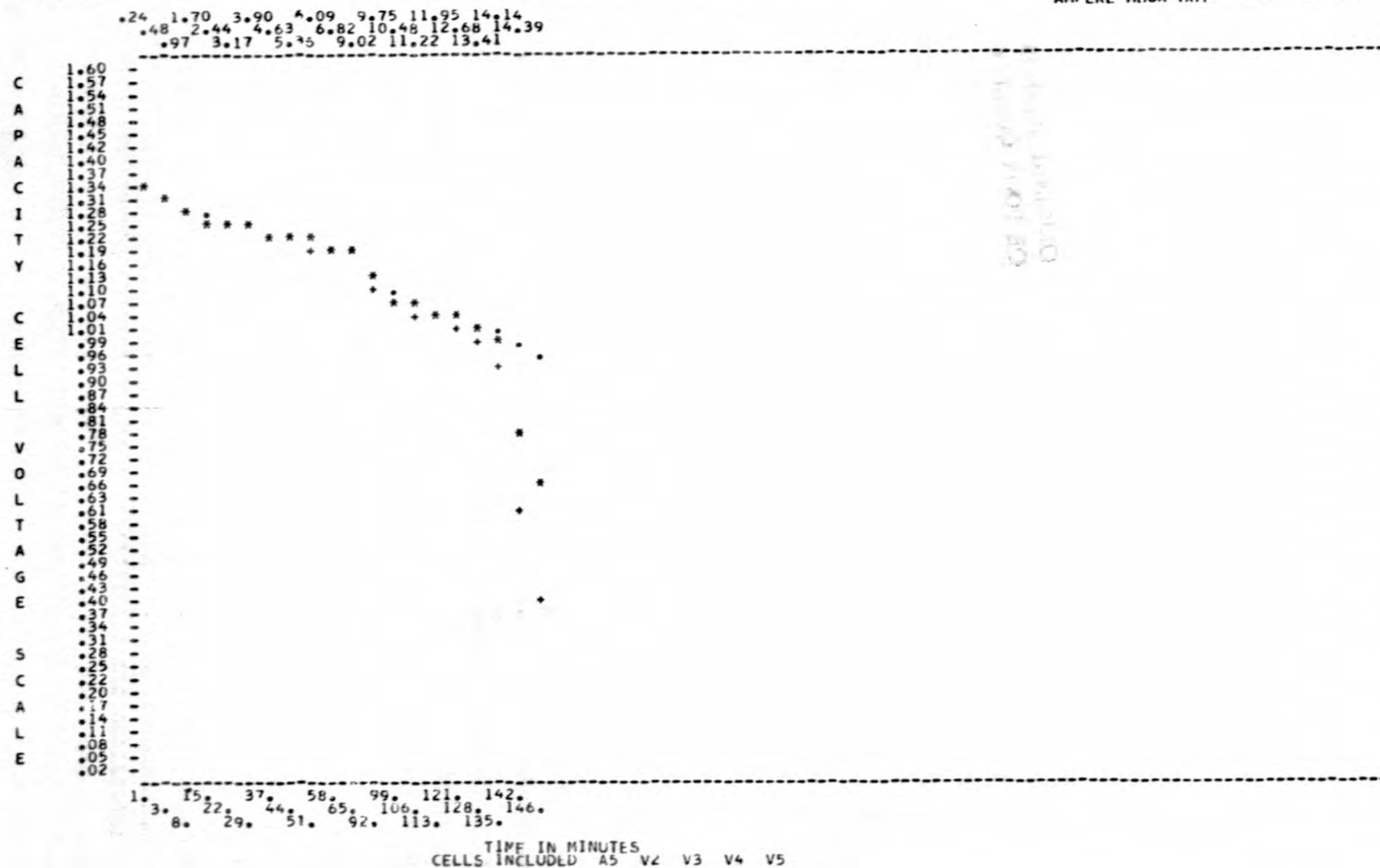


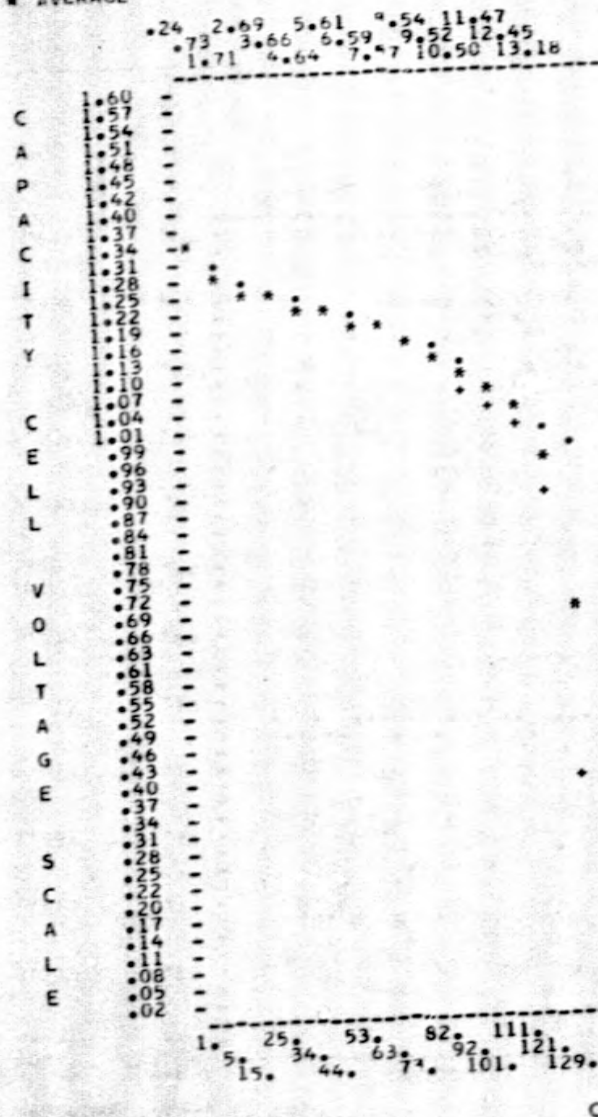
FIGURE 55

KEY
 * I-H CELL
 + L-A CELL
 * AVERAGE

PACK NUMBER 15 207A
 SHADOW PERIOD 15 14
 CYCLE NUMBER 15 2584
 DISCHARGE RATE 15 6.0

WQEC/C 77-134

AMPERE HOUR OUT



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 OF POOR QUALITY

FIGURE 56

WDEC/C 77-134

KEY
 * AVE. END DISCHARGE VOLTAGE
 + AVE. CELL VOLTAGE AT TRIP
 . AVE. CELL VOLTAGE AT EOC
 A AVE. AUX-ELECT. VOLT. AT EOD
 B AVE. AUX-ELECT. VOLT. AT TRIP
 X PRESSURE TRANS. AT EOC
 Y PRESSURE TRANS. AT TRIP

SYNCHRONOUS GRUIT SHADOW PLOT

PACK = 207A

DEPTH DISCHARGE 60
 TEMPERATURE 00
 AMPERE RATE 12
 CATALOG 42B012AB
 SERIAL 9004,10010,12,9015,19
 GENERAL ELECTRIC CELLS
 PROJECT ATS F/G (Prototype)

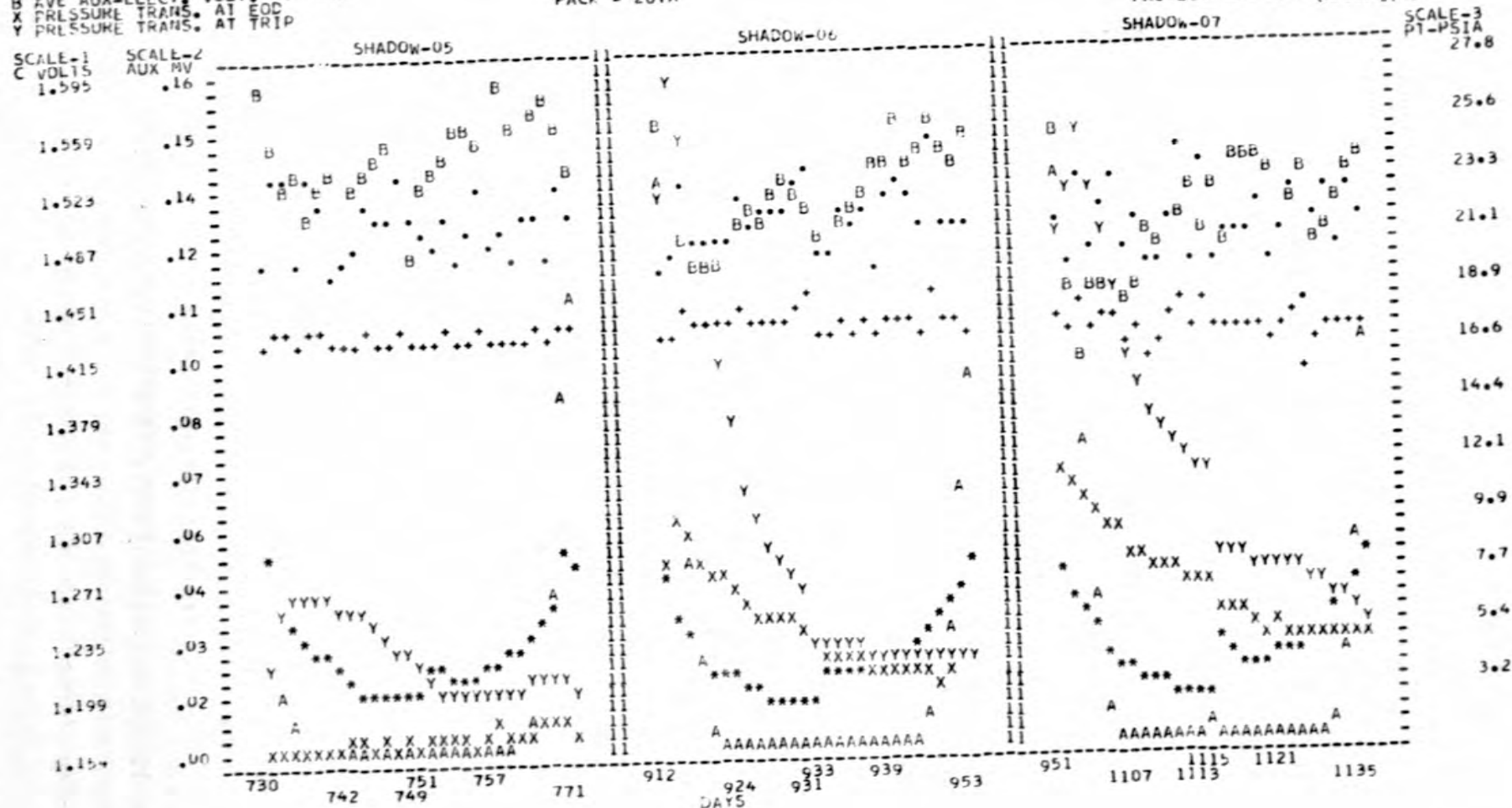


FIGURE 57

KEY
 * AVE END DISCHARGE VOLTAGE
 * AVE CELL VOLTAGE AT TRIP
 * AVE CELL VOLTAGE AT EOC
 A AVE AUX-ELECT. VOLT. AT EOD
 B AVE AUX-ELECT. VOLT. AT TOIP
 P PRESSURE TRANS. AT EOC
 P PRESSURE TRANS. AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 207A

DEPTH DISCHARGE 60
 TEMPERATURE 00
 AMPLC RATE 12
 CATALOG 42B012AB
 SERIAL 9004, 10010, 12, 9015, 19
 GENERAL ELECTRIC CELLS
 PROJECT AT5 F/G (Prototype)

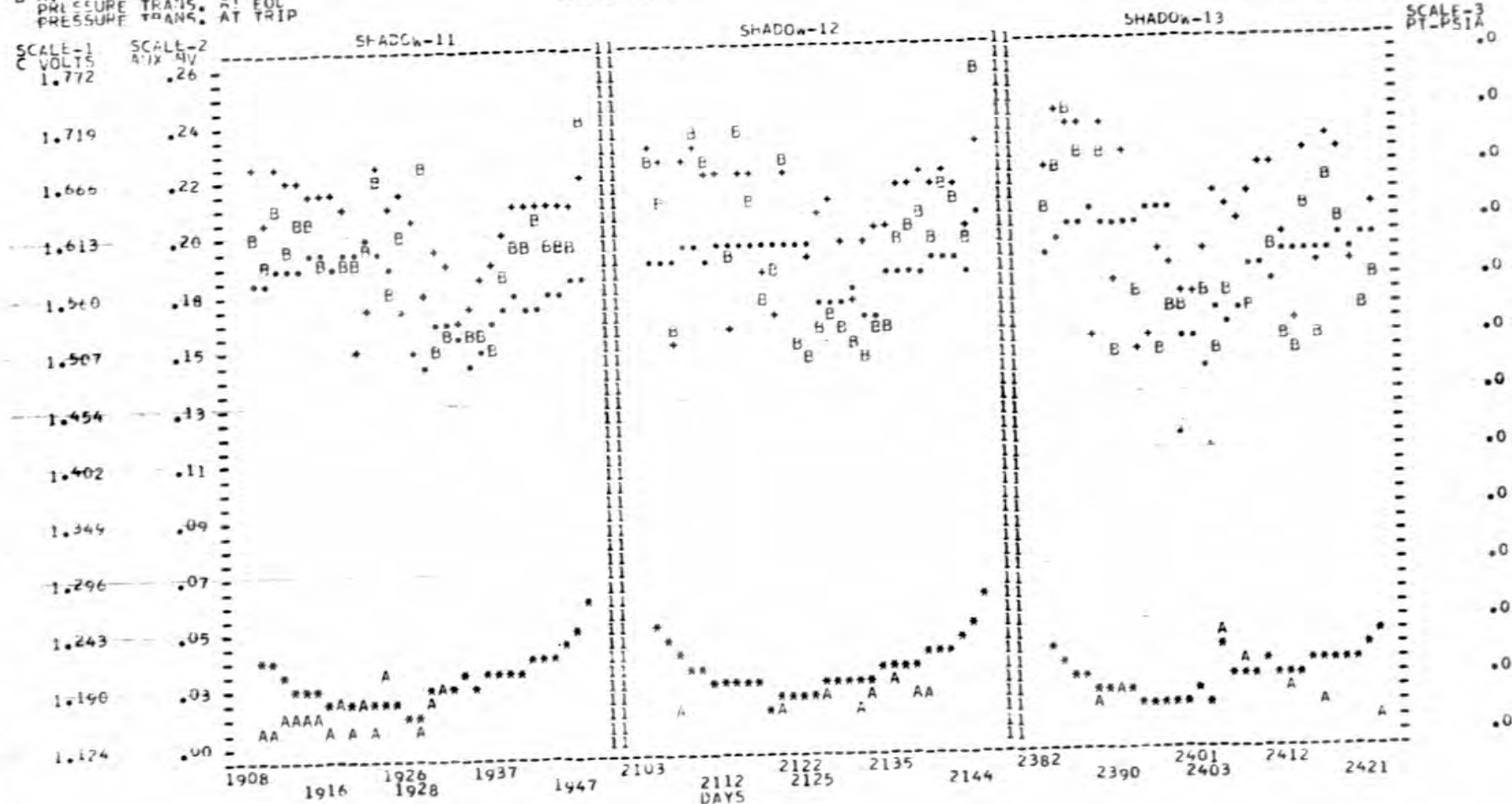


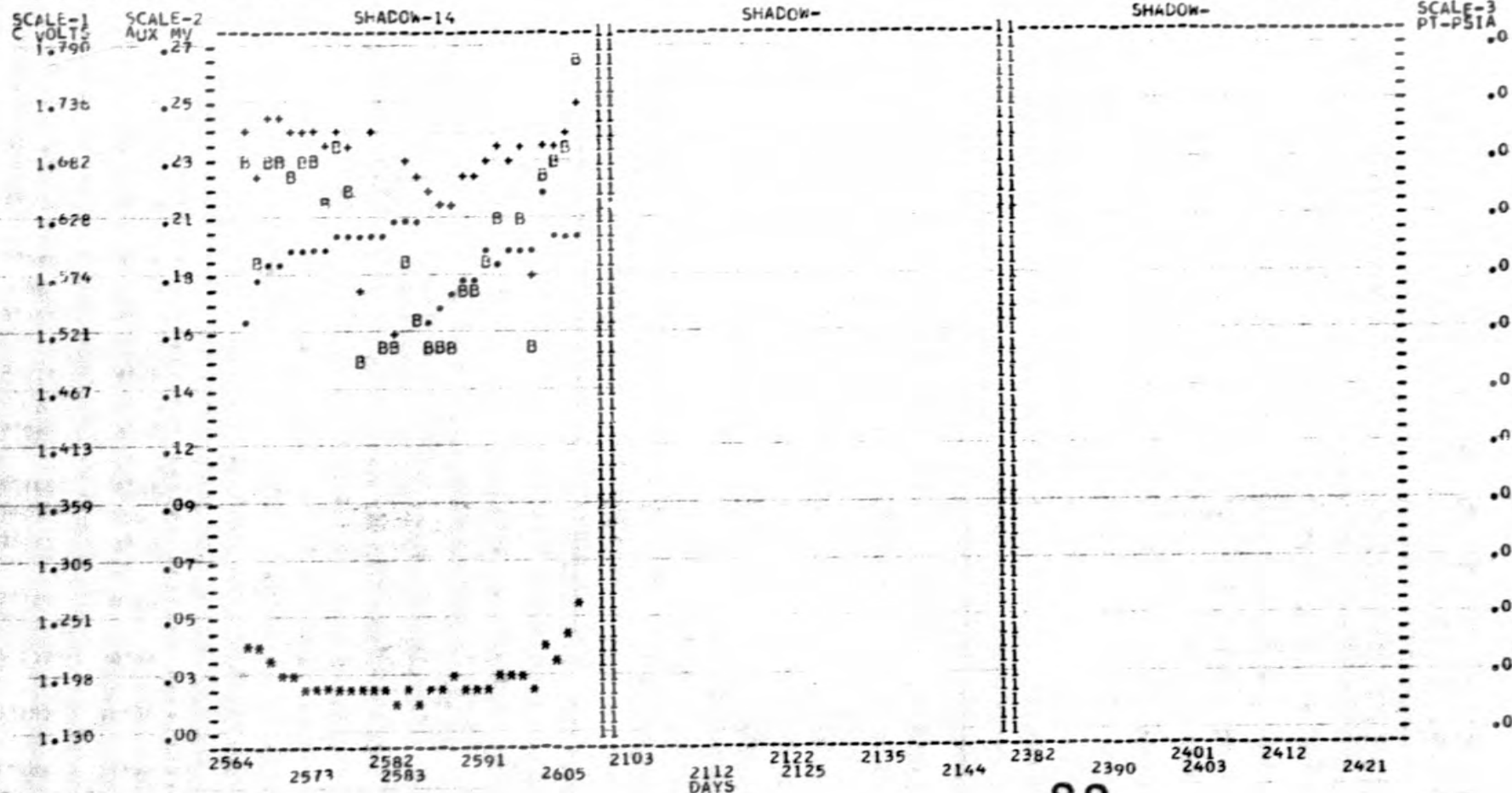
FIGURE 59

KEY
 * AVL END DISCHARGE VOLTAGE
 + AVE CELL VOLTAGE AT TRIP
 • AVE CELL VOLTAGE AT EOC
 A AVE AUX-ELECT. VOLT. AT EOD
 B AVE AUX-ELECT. VOLT. AT TRIP
 PRESSURE TRANS. AT EOD
 PRESSURE TRANS. AT TRIP

SYNCHRONOUS GREIT SHADOW PLOT

PACK = 207A

DEPTH DISCHARGE 60
 TEMPERATURE 00
 AMPERE RATE 12
 CATALOG 428012AB
 SERIAL 9004, 10010, 12, 9015, 19
 GENERAL ELECTRIC CELLS
 PROJECT ATS F/G (Prototype)



NOTE: Cell 1 removed prior to Shadow 11.

FIGURE 60

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KEY
 * AHU
 * AH1-TOTAL
 * AH1 AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 207A

DEPTH DISCHARGE 60 WQEC/C 77-134
 TEMPERATURE 00
 AMPERE RATE 12
 CATALOG 428012AB
 SERIAL 900410010,12,9015,19
 GENERAL ELECTRIC CELLS
 PROJECT ATS F/G (Prototype)

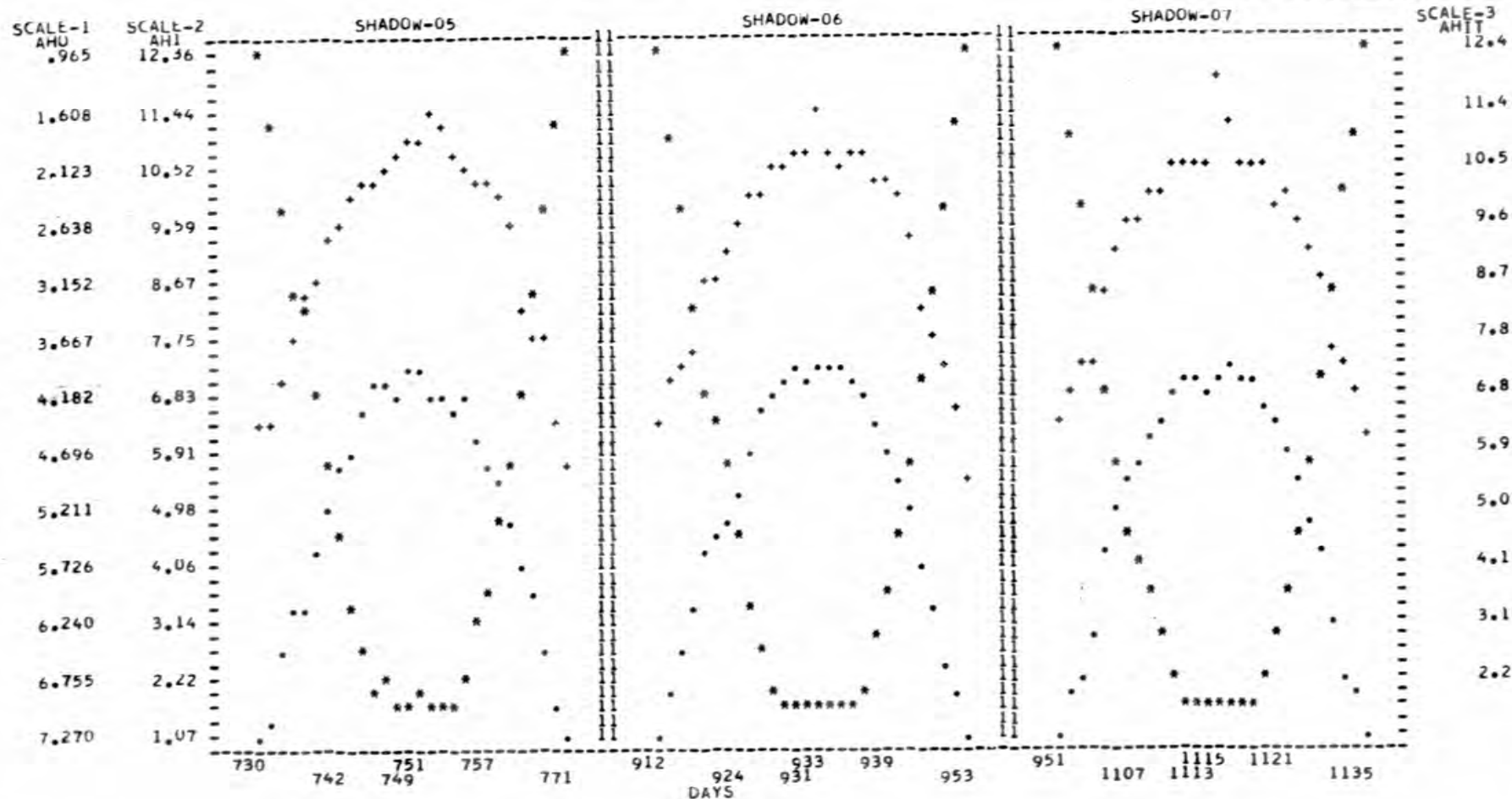


FIGURE 61

KEY
 * AHO
 * AHI-TOTAL
 * AHI AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 207A

DEPTH DISCHARGE 6.0 WQEC/C 77-134
 TEMPERATURE 00
 AMPERE RATE 12
 CATALOG 428012AB
 SERIAL 900410010.12.9015.19
 GENERAL ELECTRIC (FLLS)
 PROJECT AT5 F/G (Prototype)

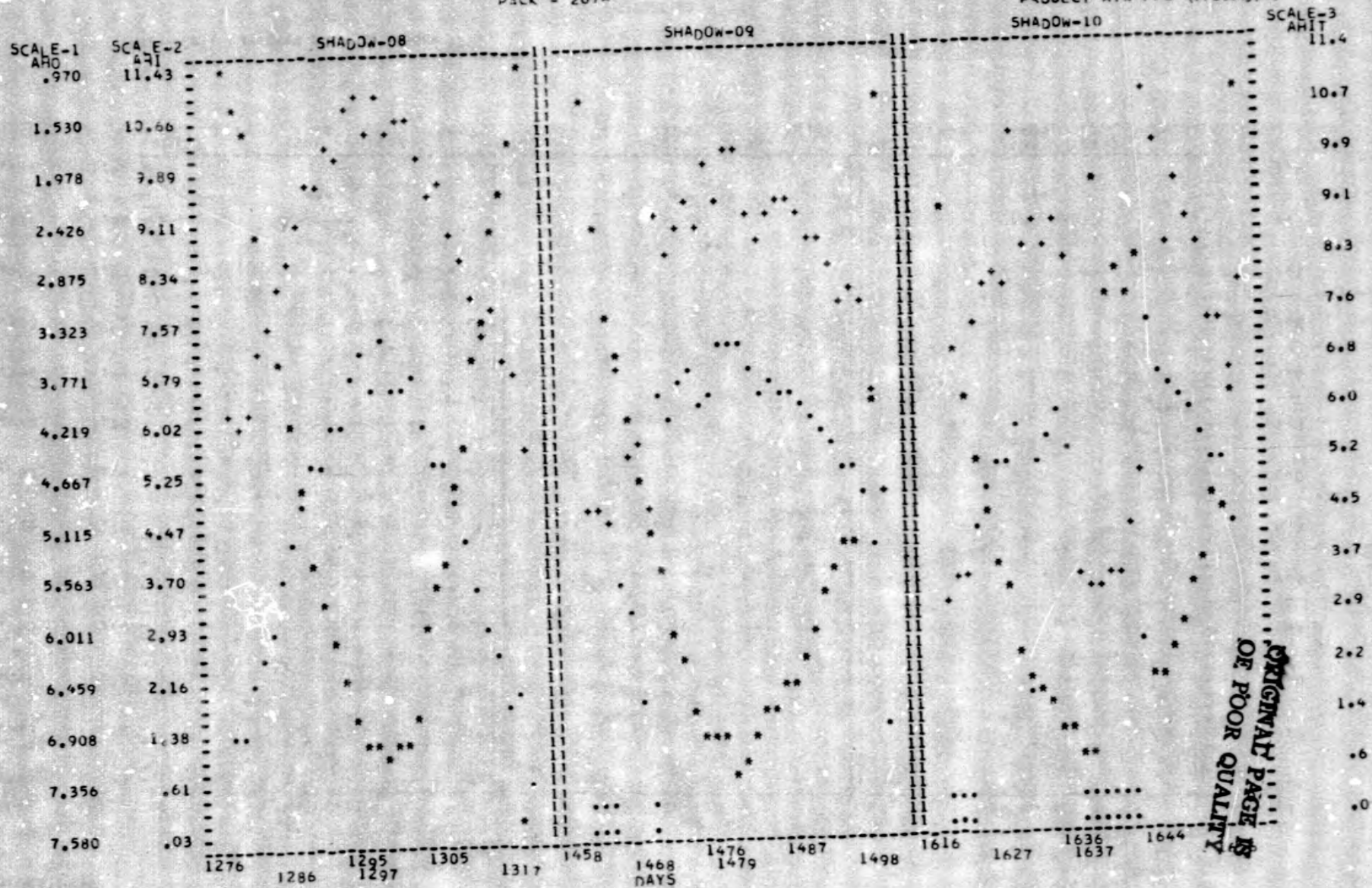


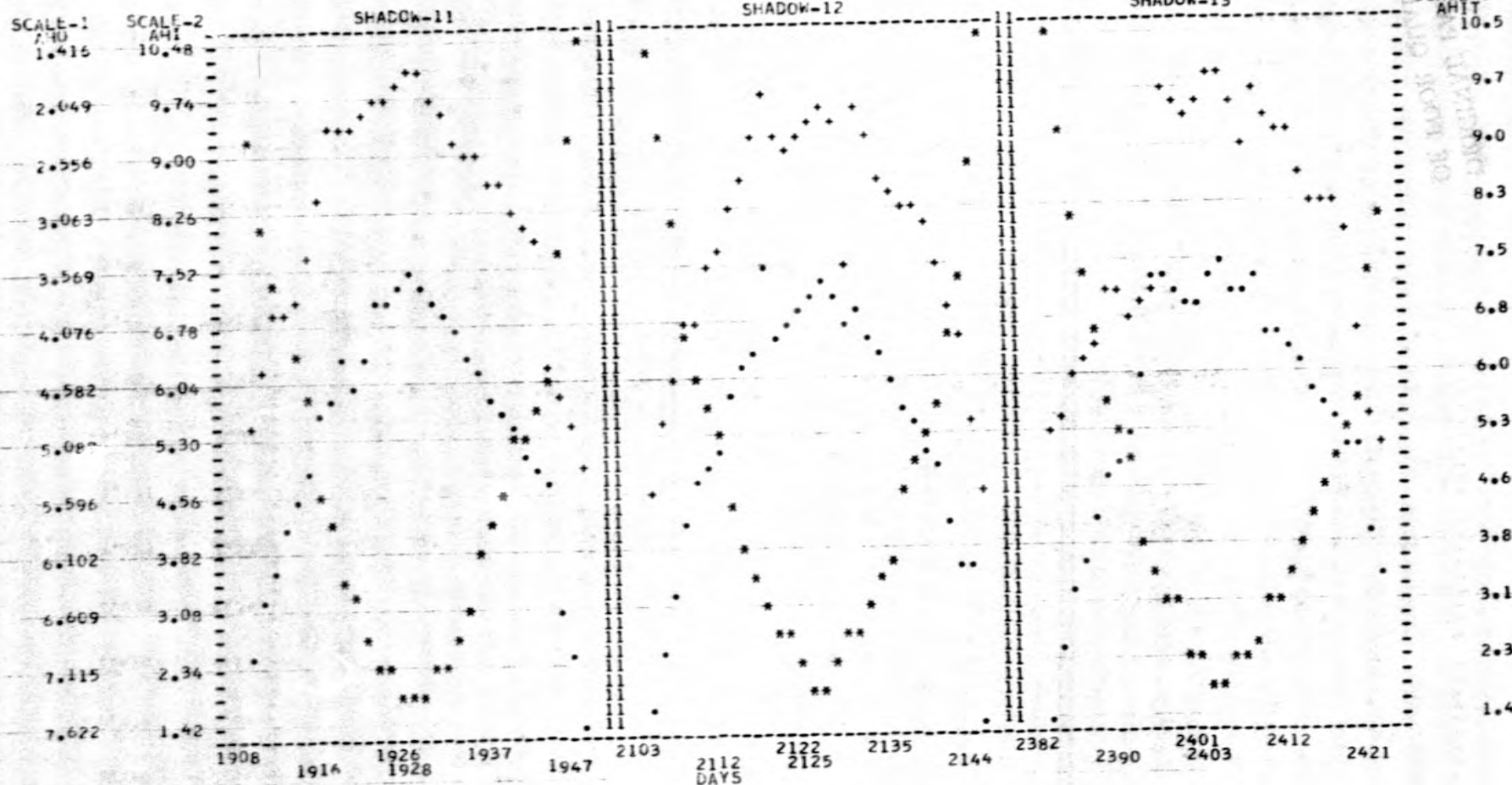
FIGURE 62

KEY
 * AHI
 + AHI-TOTAL
 . AHI AT-TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 207A

DEPTH DISCHARGE 60
 TEMPERATURE 00 WQEC/C 77-134
 AMPERE RATE 12
 CATALOG 428012AB
 SERIAL 9004,10010,12,9015,19
 GENERAL ELECTRIC CELLS
 PROJECT ATS F/G (Prototype)



NOTE: Cell 1 removed prior to Shadow 11

FIGURE 63

KEY
 * AHU
 * AHU-TOTAL
 * AHU AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 207A

DEPTH DISCHARGE 60
 TEMPERATURE 00
 AMPERE RATE 12
 CATALOG 425012AB
 SERIAL 9004,10010,12,9015,19
 GENERAL ELECTRIC CELLS
 PROJECT AT5 F/G (Prototype)

SCALE-3
 AHU
 10.3

SCALE-1
 AHU
 1.416

SCALE-2
 AHU
 10.30

SHADOW-14

SHADOW-

SHADOW-

2.042

9.58

2.543

8.86

3.044

8.14

3.544

7.42

4.045

6.70

4.546

5.98

5.046

5.26

5.547

4.54

6.048

3.82

6.548

3.10

7.049

2.37

7.550

1.47

2564

2573

2582
2583

2591

2605

2103

2112
DAYS

2122
2125

2135

2144

2382

2390

2401
2403

2412

2421

9.6

8.9

8.1

7.4

6.7

6.0

5.3

4.5

3.8

3.1

2.4

1.5

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NOTE: Cell 1 removed prior to Shadow 11.

FIGURE 64

DATE OF RUN IS 08/27/76

PACK NUMBER IS 207A

SHADOW PERIOD IS 5

CYCLE 15

750.

HIGH-V

LOW-V

1.

[illegible]

DATE OF RUN 15 08/27/76

PACK NUMBER 15 207A

SHADOW PERIOD 15 7

CYCLE 15 1114.

WQEC/C 77-134
PAGE 15 5.

TIME	AMPS	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	AVL-V	HIGH-V	LOW-V
1.	.200	V1	1.352	V2	1.350	V3	1.353	V4	1.351	V5	1.350	1.350
2.	.400	V1	1.322	V2	1.320	V3	1.322	V4	1.320	V5	1.320	1.320
4.	.600	V1	1.302	V2	1.302	V3	1.304	V4	1.302	V5	1.303	1.302
6.	.800	V1	1.291	V2	1.290	V3	1.292	V4	1.290	V5	1.291	1.290
8.	1.000	V1	1.282	V2	1.281	V3	1.283	V4	1.282	V5	1.282	1.281
10.	1.200	V1	1.277	V2	1.275	V3	1.278	V4	1.275	V5	1.276	1.275
12.	1.400	V1	1.271	V2	1.270	V3	1.273	V4	1.271	V5	1.271	1.270
14.	1.600	V1	1.266	V2	1.267	V3	1.269	V4	1.268	V5	1.268	1.267
16.	1.800	V1	1.263	V2	1.263	V3	1.266	V4	1.265	V5	1.266	1.263
18.	2.000	V1	1.260	V2	1.260	V3	1.263	V4	1.261	V5	1.263	1.260
20.	2.200	V1	1.257	V2	1.257	V3	1.259	V4	1.259	V5	1.260	1.259
22.	2.400	V1	1.255	V2	1.255	V3	1.257	V4	1.257	V5	1.257	1.256
24.	2.600	V1	1.252	V2	1.252	V3	1.255	V4	1.255	V5	1.255	1.255
26.	2.800	V1	1.251	V2	1.251	V3	1.253	V4	1.251	V5	1.251	1.251
28.	3.000	V1	1.249	V2	1.249	V3	1.252	V4	1.249	V5	1.250	1.249
30.	3.200	V1	1.247	V2	1.248	V3	1.250	V4	1.247	V5	1.248	1.247
32.	3.400	V1	1.245	V2	1.245	V3	1.248	V4	1.245	V5	1.245	1.244
34.	3.600	V1	1.242	V2	1.242	V3	1.244	V4	1.241	V5	1.242	1.241
36.	3.800	V1	1.239	V2	1.239	V3	1.242	V4	1.239	V5	1.240	1.239
38.	4.000	V1	1.237	V2	1.237	V3	1.240	V4	1.237	V5	1.238	1.237
40.	4.200	V1	1.234	V2	1.234	V3	1.238	V4	1.234	V5	1.235	1.234
42.	4.400	V1	1.231	V2	1.231	V3	1.234	V4	1.231	V5	1.232	1.231
44.	4.600	V1	1.229	V2	1.229	V3	1.232	V4	1.229	V5	1.230	1.229
46.	4.800	V1	1.226	V2	1.226	V3	1.230	V4	1.226	V5	1.227	1.226
48.	5.000	V1	1.223	V2	1.223	V3	1.228	V4	1.222	V5	1.224	1.222
50.	5.200	V1	1.220	V2	1.220	V3	1.224	V4	1.220	V5	1.221	1.220
52.	5.400	V1	1.219	V2	1.219	V3	1.221	V4	1.218	V5	1.219	1.218
54.	5.600	V1	1.215	V2	1.215	V3	1.219	V4	1.215	V5	1.216	1.215
56.	5.800	V1	1.212	V2	1.212	V3	1.216	V4	1.211	V5	1.213	1.211
58.	6.000	V1	1.210	V2	1.210	V3	1.212	V4	1.209	V5	1.210	1.209
60.	6.200	V1	1.207	V2	1.207	V3	1.209	V4	1.205	V5	1.207	1.205
62.	6.400	V1	1.204	V2	1.204	V3	1.208	V4	1.202	V5	1.204	1.202
64.	6.600	V1	1.201	V2	1.201	V3	1.205	V4	1.199	V5	1.201	1.199
66.	6.800	V1	1.198	V2	1.198	V3	1.201	V4	1.196	V5	1.197	1.195
68.	7.000	V1	1.195	V2	1.195	V3	1.198	V4	1.192	V5	1.193	1.191
70.	7.200	V1	1.192	V2	1.192	V3	1.195	V4	1.189	V5	1.191	1.189
72.	7.400	V1	1.189	V2	1.189	V3	1.191	V4	1.186	V5	1.188	1.186
74.	7.600	V1	1.187	V2	1.187	V3	1.189	V4	1.183	V5	1.186	1.183
76.	7.800	V1	1.184	V2	1.184	V3	1.187	V4	1.181	V5	1.184	1.181
78.	8.000	V1	1.181	V2	1.181	V3	1.184	V4	1.180	V5	1.183	1.180
80.	8.200	V1	1.178	V2	1.178	V3	1.181	V4	1.177	V5	1.181	1.178
82.	8.400	V1	1.175	V2	1.175	V3	1.178	V4	1.174	V5	1.180	1.175
84.	8.600	V1	1.172	V2	1.172	V3	1.175	V4	1.171	V5	1.178	1.172
86.	8.800	V1	1.169	V2	1.169	V3	1.172	V4	1.168	V5	1.177	1.169
88.	9.000	V1	1.166	V2	1.166	V3	1.169	V4	1.165	V5	1.174	1.166
90.	9.200	V1	1.163	V2	1.163	V3	1.166	V4	1.162	V5	1.171	1.163
92.	9.400	V1	1.160	V2	1.160	V3	1.163	V4	1.159	V5	1.169	1.160
94.	9.600	V1	1.157	V2	1.157	V3	1.160	V4	1.156	V5	1.167	1.157
96.	9.800	V1	1.154	V2	1.154	V3	1.157	V4	1.153	V5	1.165	1.153
98.	10.000	V1	1.151	V2	1.151	V3	1.154	V4	1.150	V5	1.163	1.150
100.	10.200	V1	1.148	V2	1.148	V3	1.151	V4	1.147	V5	1.160	1.147
102.	10.400	V1	1.145	V2	1.145	V3	1.148	V4	1.144	V5	1.157	1.144
104.	10.600	V1	1.142	V2	1.142	V3	1.145	V4	1.141	V5	1.154	1.141
106.	10.800	V1	1.139	V2	1.139	V3	1.142	V4	1.138	V5	1.151	1.138

DATE OF RUN IS 08/27/76		PACK NUMBER IS 2074				SHADOW PERIOD IS 6		CYCLE IS 1296.		WQEC/C 77-134		
										PAGE 15 7.		
TIME	AMPS	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	AVE-V	HIGH-V	LOW-V	
1.	.099	V1	1.351	V2	1.348	V3	1.351	V4	1.349	.000	.000	.000
4.	.398	V1	1.317	V2	1.317	V3	1.317	V4	1.317	.000	.000	.000
6.	.598	V1	1.301	V2	1.301	V3	1.301	V4	1.301	.000	.000	.000
8.	.799	V1	1.289	V2	1.289	V3	1.289	V4	1.289	.000	.000	.000
10.	1.000	V1	1.273	V2	1.273	V3	1.273	V4	1.273	.000	.000	.000
12.	1.202	V1	1.264	V2	1.264	V3	1.264	V4	1.264	.000	.000	.000
14.	1.403	V1	1.259	V2	1.259	V3	1.259	V4	1.259	.000	.000	.000
16.	1.606	V1	1.256	V2	1.256	V3	1.256	V4	1.256	.000	.000	.000
18.	1.808	V1	1.253	V2	1.253	V3	1.253	V4	1.253	.000	.000	.000
20.	2.010	V1	1.251	V2	1.251	V3	1.251	V4	1.251	.000	.000	.000
22.	2.212	V1	1.249	V2	1.249	V3	1.249	V4	1.249	.000	.000	.000
24.	2.414	V1	1.247	V2	1.247	V3	1.247	V4	1.247	.000	.000	.000
26.	2.616	V1	1.245	V2	1.245	V3	1.245	V4	1.245	.000	.000	.000
28.	2.818	V1	1.243	V2	1.243	V3	1.243	V4	1.243	.000	.000	.000
30.	3.020	V1	1.241	V2	1.241	V3	1.241	V4	1.241	.000	.000	.000
32.	3.222	V1	1.239	V2	1.239	V3	1.239	V4	1.239	.000	.000	.000
34.	3.424	V1	1.237	V2	1.237	V3	1.237	V4	1.237	.000	.000	.000
36.	3.627	V1	1.235	V2	1.235	V3	1.235	V4	1.235	.000	.000	.000
38.	3.829	V1	1.233	V2	1.233	V3	1.233	V4	1.233	.000	.000	.000
40.	4.032	V1	1.231	V2	1.231	V3	1.231	V4	1.231	.000	.000	.000
42.	4.234	V1	1.229	V2	1.229	V3	1.229	V4	1.229	.000	.000	.000
44.	4.437	V1	1.227	V2	1.227	V3	1.227	V4	1.227	.000	.000	.000
46.	4.639	V1	1.225	V2	1.225	V3	1.225	V4	1.225	.000	.000	.000
48.	4.842	V1	1.223	V2	1.223	V3	1.223	V4	1.223	.000	.000	.000
50.	5.044	V1	1.221	V2	1.221	V3	1.221	V4	1.221	.000	.000	.000
52.	5.247	V1	1.219	V2	1.219	V3	1.219	V4	1.219	.000	.000	.000
54.	5.449	V1	1.217	V2	1.217	V3	1.217	V4	1.217	.000	.000	.000
56.	5.652	V1	1.215	V2	1.215	V3	1.215	V4	1.215	.000	.000	.000
58.	5.854	V1	1.213	V2	1.213	V3	1.213	V4	1.213	.000	.000	.000
60.	6.057	V1	1.211	V2	1.211	V3	1.211	V4	1.211	.000	.000	.000
62.	6.259	V1	1.209	V2	1.209	V3	1.209	V4	1.209	.000	.000	.000
64.	6.462	V1	1.207	V2	1.207	V3	1.207	V4	1.207	.000	.000	.000
66.	6.664	V1	1.205	V2	1.205	V3	1.205	V4	1.205	.000	.000	.000
68.	6.867	V1	1.203	V2	1.203	V3	1.203	V4	1.203	.000	.000	.000
70.	7.069	V1	1.201	V2	1.201	V3	1.201	V4	1.201	.000	.000	.000
72.	7.272	V1	1.199	V2	1.199	V3	1.199	V4	1.199	.000	.000	.000
74.	7.474	V1	1.197	V2	1.197	V3	1.197	V4	1.197	.000	.000	.000
76.	7.677	V1	1.195	V2	1.195	V3	1.195	V4	1.195	.000	.000	.000
78.	7.879	V1	1.193	V2	1.193	V3	1.193	V4	1.193	.000	.000	.000
80.	8.082	V1	1.191	V2	1.191	V3	1.191	V4	1.191	.000	.000	.000
82.	8.284	V1	1.189	V2	1.189	V3	1.189	V4	1.189	.000	.000	.000
84.	8.487	V1	1.187	V2	1.187	V3	1.187	V4	1.187	.000	.000	.000
86.	8.689	V1	1.185	V2	1.185	V3	1.185	V4	1.185	.000	.000	.000
88.	8.892	V1	1.183	V2	1.183	V3	1.183	V4	1.183	.000	.000	.000
90.	9.094	V1	1.181	V2	1.181	V3	1.181	V4	1.181	.000	.000	.000
92.	9.297	V1	1.179	V2	1.179	V3	1.179	V4	1.179	.000	.000	.000
94.	9.499	V1	1.177	V2	1.177	V3	1.177	V4	1.177	.000	.000	.000
96.	9.702	V1	1.175	V2	1.175	V3	1.175	V4	1.175	.000	.000	.000
98.	9.904	V1	1.173	V2	1.173	V3	1.173	V4	1.173	.000	.000	.000
100.	10.107	V1	1.171	V2	1.171	V3	1.171	V4	1.171	.000	.000	.000
102.	10.309	V1	1.169	V2	1.169	V3	1.169	V4	1.169	.000	.000	.000
104.	10.512	V1	1.167	V2	1.167	V3	1.167	V4	1.167	.000	.000	.000
106.	10.714	V1	1.165	V2	1.165	V3	1.165	V4	1.165	.000	.000	.000
108.	10.917	V1	1.163	V2	1.163	V3	1.163	V4	1.163	.000	.000	.000

DATE OF RUN IS 08/27/76	PACK NUMBER IS 207A	SHADOW PERIOD IS 8	CYCLE IS 1296.	MTGH-V	LOW-V	PAGE IS 8.
TIME	CELL-V	CELL-V	CELL-V	AVE-V		
0.244	V	6.0	0.00	1.159	1.171	1.138
0.244	V	6.0	0.00	1.159	1.168	1.131
0.244	V	6.0	0.00	1.159	1.166	1.122
0.244	V	6.0	0.00	1.159	1.162	1.115
0.244	V	6.0	0.00	1.159	1.157	1.107
0.244	V	6.0	0.00	1.159	1.151	1.098
0.244	V	6.0	0.00	1.159	1.149	1.090
0.244	V	6.0	0.00	1.159	1.141	1.080
0.244	V	6.0	0.00	1.159	1.133	1.057
0.244	V	6.0	0.00	1.159	1.125	1.050
0.244	V	6.0	0.00	1.159	1.110	1.042
0.244	V	6.0	0.00	1.159	1.097	1.036
0.244	V	6.0	0.00	1.159	1.084	1.029
0.244	V	6.0	0.00	1.159	1.073	1.020
0.244	V	6.0	0.00	1.159	1.062	1.010
0.244	V	6.0	0.00	1.159	1.051	1.000
0.244	V	6.0	0.00	1.159	1.042	0.999
0.244	V	6.0	0.00	1.159	1.031	0.985
0.244	V	6.0	0.00	1.159	1.015	0.974
0.244	V	6.0	0.00	1.159	1.009	0.968
0.244	V	6.0	0.00	1.159	0.995	0.949
0.244	V	6.0	0.00	1.159	0.984	0.937
0.244	V	6.0	0.00	1.159	0.975	0.920
0.244	V	6.0	0.00	1.159	0.965	0.907
0.244	V	6.0	0.00	1.159	0.950	0.892
0.244	V	6.0	0.00	1.159	0.932	0.875
0.244	V	6.0	0.00	1.159	0.914	0.845
0.244	V	6.0	0.00	1.159	0.892	0.810
0.244	V	6.0	0.00	1.159	0.875	0.792
0.244	V	6.0	0.00	1.159	0.850	0.750

ORIGINAL PAGE IS
OF POOR QUALITY

DATE OF RUN IS 09/10/76

PACK NUMBER IS 207A

SHADOW PERIOD IS 10

CYCLE IS

1635.

WQEC/C 77-134

PAGE IS 16.

TIME	AMPS	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	AVE-V	HTGH-V	LOW-V
1032.	.243	A5	.003 V1	1.270 V2	1.276 V3	1.280 V4	1.271 V5	1.276	.000	1.275	1.280	1.270
1035.	.486	A5	.007 V1	1.251 V2	1.263 V3	1.266 V4	1.258 V5	1.256	.000	1.259	1.266	1.251
1037.	.729	A5	.000 V1	1.241 V2	1.250 V3	1.255 V4	1.248 V5	1.247	.000	1.248	1.255	1.241
1040.	.972	A5	.007 V1	1.230 V2	1.243 V3	1.245 V4	1.242 V5	1.241	.000	1.240	1.245	1.230
1042.	.215	A5	.007 V1	1.208 V2	1.236 V3	1.238 V4	1.233 V5	1.224	.000	1.229	1.238	1.208
1044.	.458	A5	.001 V1	1.208 V2	1.229 V3	1.231 V4	1.228 V5	1.224	.000	1.224	1.229	1.208
1047.	.701	A5	.004 V1	1.197 V2	1.223 V3	1.221 V4	1.216 V5	1.215	.000	1.214	1.223	1.197
1049.	.944	A5	.004 V1	1.186 V2	1.214 V3	1.211 V4	1.206 V5	1.203	.000	1.207	1.218	1.186
1052.	.187	A5	.004 V1	1.173 V2	1.210 V3	1.211 V4	1.202 V5	1.203	.000	1.200	1.211	1.173
1054.	.430	A5	.004 V1	1.153 V2	1.198 V3	1.205 V4	1.196 V5	1.197	.000	1.191	1.205	1.155
1056.	.673	A5	.004 V1	1.122 V2	1.193 V3	1.204 V4	1.188 V5	1.182	.000	1.181	1.204	1.122
1059.	.916	A5	.004 V1	1.052 V2	1.189 V3	1.192 V4	1.184 V5	1.182	.000	1.161	1.193	1.052
1101.	.159	A5	.004 V1	1.022 V2	1.181 V3	1.190 V4	1.179 V5	1.180	.000	1.152	1.190	1.022
1104.	.402	A5	.004 V1	.923 V2	1.181 V3	1.182 V4	1.169 V5	1.170	.000	1.125	1.182	.923
1108.	.887	A5	.004 V1	.678 V2	1.178 V3	1.180 V4	1.164 V5	1.166	.000	1.073	1.180	.678
1111.	.127	A5	.004 V1	.207 V2	1.176 V3	1.177 V4	1.160 V5	1.162	.000	.976	1.177	.207

DATE OF RUN IS 09/10/76

PACK NUMBER IS 207A

SHADOW PERIOD IS 12

CYCLE IS

2123.

WQEC/C 77-134
PAGE IS 17.

TIME	AMPS	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	AVE-V	HTGH-V	LOW-V	
1345.	244	A5	.003	V2	1.326	V3	1.329	V4	1.325	V5	1.325	1.326	1.329	1.325
1353.	276	A5	.002	V2	1.279	V3	1.282	V4	1.272	V5	1.278	1.278	1.282	1.272
1400.	708	A5	.003	V2	1.262	V3	1.265	V4	1.260	V5	1.260	1.262	1.265	1.260
1407.	439	A5	.003	V2	1.251	V3	1.254	V4	1.249	V5	1.248	1.250	1.254	1.248
1414.	171	A5	.003	V2	1.241	V3	1.245	V4	1.239	V5	1.238	1.241	1.245	1.238
1421.	903	A5	.003	V2	1.231	V3	1.234	V4	1.229	V5	1.228	1.230	1.234	1.228
1429.	635	A5	.003	V2	1.221	V3	1.225	V4	1.218	V5	1.218	1.220	1.225	1.218
1436.	367	A5	.003	V2	1.211	V3	1.215	V4	1.207	V5	1.207	1.210	1.215	1.207
1443.	931	A5	.003	V2	1.199	V3	1.202	V4	1.195	V5	1.194	1.197	1.202	1.194
1450.	831	A5	.003	V2	1.187	V3	1.190	V4	1.180	V5	1.179	1.184	1.190	1.179
1457.	363	A5	.003	V2	1.175	V3	1.177	V4	1.164	V5	1.164	1.170	1.177	1.164
1505.	293	A5	.003	V2	1.166	V3	1.167	V4	1.148	V5	1.147	1.157	1.167	1.147
1512.	927	A5	.004	V2	1.157	V3	1.154	V4	1.123	V5	1.122	1.139	1.157	1.122
1519.	759	A5	.004	V2	1.143	V3	1.127	V4	1.094	V5	1.091	1.114	1.143	1.091
1523.	491	A5	.017	V2	1.119	V3	1.099	V4	1.069	V5	1.067	1.088	1.119	1.067
1533.	223	A5	.021	V2	1.090	V3	1.076	V4	1.050	V5	1.048	1.066	1.090	1.048
1541.	955	A5	.021	V2	1.063	V3	1.057	V4	1.033	V5	1.031	1.046	1.063	1.031
1548.	687	A5	.033	V2	1.041	V3	1.040	V4	1.010	V5	1.005	1.024	1.041	1.005
1553.	419	A5	.033	V2	1.018	V3	1.019	V4	954	V5	930	980	1.019	930
1602.	151	A5	.053	V2	979	V3	972	V4	717	V5	591	815	979	591
1605.	395	A5	.061	V2	960	V3	947	V4	540	V5	411	714	960	411

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DATE OF RUN IS 09/10/76

PACK NUMBER IS 207A

SHADOW PERIOD IS 13

CYCLE IS

2402.

TIME	AMPS	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	AVE-V	HIGH-V	LOW-V
1226.	.240	A5 .001 V2	1.325 V3	1.328 V4	1.324 V5	1.324	.000	.000	.000	1.325	1.328	1.324
1228.	.480	A5 .001 V2	1.304 V3	1.307 V4	1.303 V5	1.302	.000	.000	.000	1.304	1.307	1.302
1230.	.970	A5 .007 V2	1.279 V3	1.283 V4	1.278 V5	1.277	.000	.000	.000	1.279	1.283	1.277
1233.	1.700	A5 .007 V2	1.261 V3	1.265 V4	1.259 V5	1.259	.000	.000	.000	1.261	1.265	1.259
1240.	2.440	A5 .007 V2	1.239 V3	1.243 V4	1.247 V5	1.247	.000	.000	.000	1.249	1.254	1.247
1247.	3.170	A5 .007 V2	1.229 V3	1.234 V4	1.237 V5	1.237	.000	.000	.000	1.239	1.243	1.237
1254.	3.900	A5 .003 V2	1.229 V3	1.234 V4	1.237 V5	1.237	.000	.000	.000	1.239	1.243	1.237
1302.	4.630	A5 .003 V2	1.219 V3	1.223 V4	1.227 V5	1.226	.000	.000	.000	1.229	1.234	1.226
1309.	5.360	A5 .003 V2	1.208 V3	1.213 V4	1.205 V5	1.216	.000	.000	.000	1.219	1.223	1.216
1316.	6.090	A5 .003 V2	1.196 V3	1.201 V4	1.192 V5	1.205	.000	.000	.000	1.208	1.213	1.205
1323.	6.820	A5 .004 V2	1.183 V3	1.187 V4	1.176 V5	1.192	.000	.000	.000	1.195	1.201	1.192
1330.	9.020	A5 .004 V2	1.144 V3	1.141 V4	1.116 V5	1.114	.000	.000	.000	1.180	1.187	1.176
1337.	10.480	A5 .013 V2	1.100 V3	1.096 V4	1.074 V5	1.072	.000	.000	.000	1.129	1.144	1.114
1404.	11.220	A5 .027 V2	1.075 V3	1.074 V4	1.053 V5	1.052	.000	.000	.000	1.085	1.100	1.072
1411.	11.950	A5 .027 V2	1.057 V3	1.057 V4	1.038 V5	1.036	.000	.000	.000	1.063	1.075	1.052
1418.	12.680	A5 .027 V2	1.042 V3	1.043 V4	1.023 V5	1.021	.000	.000	.000	1.047	1.057	1.036
1426.	13.410	A5 .027 V2	1.028 V3	1.029 V4	1.001 V5	.999	.000	.000	.000	1.032	1.043	1.021
1433.	14.140	A5 .055 V2	1.010 V3	1.005 V4	.944 V5	.932	.000	.000	.000	1.014	1.029	.999
1440.	14.870	A5 .055 V2	.974 V3	.937 V4	.660 V5	.597	.000	.000	.000	.973	1.010	.932
1447.	15.600	A5 .055 V2	.951 V3	.885 V4	.465 V5	.389	.000	.000	.000	.792	.974	.597
1450.	16.330	A5 .055 V2					.000	.000	.000	.672	.951	.389

DATE OF RUN IS 09/10/76			PACK NUMBER IS 207A			SHADOW PERIOD IS 14			CYCLE IS 2584.			HIGH-V			LOW-V		
TIME	AMPS	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	CELL-V	AVE-V	HTGH-V	HTGH-V	HTGH-V	HTGH-V	HTGH-V	HTGH-V	HTGH-V
1018.	.244	A5 .001 V2	1.327 V3	1.330 V4	1.325 V5	1.325	.000	.000	.000	1.327	1.330	1.325	1.325	1.325	1.325	1.325	1.325
1022.	.734	A5 .001 V2	1.290 V3	1.293 V4	1.287 V5	1.287	.000	.000	.000	1.289	1.293	1.287	1.287	1.287	1.287	1.287	1.287
1032.	1.710	A5 .002 V2	1.260 V3	1.264 V4	1.257 V5	1.257	.000	.000	.000	1.259	1.264	1.257	1.257	1.257	1.257	1.257	1.257
1042.	2.680	A5 .002 V2	1.246 V3	1.250 V4	1.242 V5	1.242	.000	.000	.000	1.245	1.250	1.242	1.242	1.242	1.242	1.242	1.242
1051.	3.653	A5 .003 V2	1.233 V3	1.237 V4	1.229 V5	1.229	.000	.000	.000	1.232	1.237	1.229	1.229	1.229	1.229	1.229	1.229
1101.	4.633	A5 .003 V2	1.220 V3	1.224 V4	1.216 V5	1.216	.000	.000	.000	1.219	1.224	1.216	1.216	1.216	1.216	1.216	1.216
1110.	5.615	A5 .003 V2	1.206 V3	1.210 V4	1.201 V5	1.201	.000	.000	.000	1.204	1.210	1.201	1.201	1.201	1.201	1.201	1.201
1120.	6.591	A5 .003 V2	1.189 V3	1.193 V4	1.181 V5	1.181	.000	.000	.000	1.186	1.193	1.181	1.181	1.181	1.181	1.181	1.181
1130.	7.568	A5 .003 V2	1.170 V3	1.175 V4	1.166 V5	1.166	.000	.000	.000	1.164	1.175	1.166	1.166	1.166	1.166	1.166	1.166
1139.	8.544	A5 .003 V2	1.153 V3	1.158 V4	1.144 V5	1.144	.000	.000	.000	1.140	1.158	1.144	1.144	1.144	1.144	1.144	1.144
1149.	9.521	A5 .003 V2	1.120 V3	1.121 V4	1.103 V5	1.103	.000	.000	.000	1.101	1.121	1.103	1.103	1.103	1.103	1.103	1.103
1158.	10.496	A5 .015 V2	1.080 V3	1.080 V4	1.050 V5	1.050	.000	.000	.000	1.065	1.080	1.050	1.050	1.050	1.050	1.050	1.050
1208.	11.474	A5 .024 V2	1.051 V3	1.052 V4	1.017 V5	1.017	.000	.000	.000	1.034	1.052	1.017	1.017	1.017	1.017	1.017	1.017
1218.	12.450	A5 .047 V2	1.023 V3	1.019 V4	1.007 V5	1.007	.000	.000	.000	1.034	1.023	1.007	1.007	1.007	1.007	1.007	1.007
1225.	13.182	A5 .207 V2	1.001 V3	1.001 V4	1.001 V5	1.001	.000	.000	.000	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001

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DAY	AVE-CELL V END	AUX ELECT	PRESS END DIS	PRESS END TRIP	AUX ELEC	AVE-CELL V END	AVE-CELL V END	AHD	AHI	AHI-TRIP
207 2561	0000	0000	0000	0000	0000	1.7092	1.5402	1.5900	4.8500	1.7080
207 2562	0000	0000	0000	0000	0000	1.6685	1.5740	2.4400	5.5500	2.5000
207 2563	0000	0000	0000	0000	0000	1.7170	1.5842	3.6600	6.6800	3.7150
207 2564	0000	0000	0000	0000	0000	1.7185	1.5942	4.1500	7.0200	4.2070
207 2565	0000	0000	0000	0000	0000	1.7140	1.6060	4.6400	7.5200	4.6930
207 2566	0000	0000	0000	0000	0000	1.7145	1.6072	5.1300	7.9700	5.1850
207 2567	0000	0000	0000	0000	0000	1.7125	1.5960	5.3700	8.1800	5.4320
207 2568	0000	0000	0000	0000	0000	1.6910	1.6000	5.6100	8.4400	5.6660
207 2569	0000	0000	0000	0000	0000	1.7125	1.6180	6.1000	8.7700	6.1490
207 2570	0000	0000	0000	0000	0000	1.6972	1.6205	6.3500	9.2000	6.4000
207 2571	0000	0000	0000	0000	0000	1.5542	1.6167	6.5900	9.8200	7.2630
207 2572	0000	0000	0000	0000	0000	1.7090	1.6180	6.7800	9.5000	6.9540
207 2573	0000	0000	0000	0000	0000	1.6175	1.6192	6.8300	9.5000	7.0070
207 2574	0000	0000	0000	0000	0000	1.5145	1.6327	7.0800	9.7100	7.1370
207 2575	0000	0000	0000	0000	0000	1.6787	1.6275	7.0800	9.6400	7.0750
207 2576	0000	0000	0000	0000	0000	1.6635	1.6265	7.3300	9.9200	7.3210
207 2577	0000	0000	0000	0000	0000	1.6565	1.5390	7.3200	10.0000	7.5090
207 2578	0000	0000	0000	0000	0000	1.6432	1.5520	7.3200	9.9000	7.3800
207 2579	0000	0000	0000	0000	0000	1.6370	1.5585	7.0800	9.6800	7.1350
207 2580	0000	0000	0000	0000	0000	1.6707	1.5780	6.8300	9.5500	6.9000
207 2581	0000	0000	0000	0000	0000	1.6690	1.5802	6.8300	9.5300	6.8640
207 2582	0000	0000	0000	0000	0000	1.6822	1.5992	6.5900	9.3500	6.6480
207 2583	0000	0000	0000	0000	0000	1.6907	1.5940	6.3400	8.9800	6.3990
207 2584	0000	0000	0000	0000	0000	1.6840	1.5977	6.1000	8.6800	6.1590
207 2585	0000	0000	0000	0000	0000	1.6897	1.6012	5.6100	8.3900	5.6760
207 2586	0000	0000	0000	0000	0000	1.5692	1.6027	4.8700	8.0400	5.3500
207 2587	0000	0030	0000	0000	0000	1.6915	1.6547	4.6300	7.5100	4.6700
207 2588	0000	0010	0000	0000	0000	1.7015	1.6127	4.1400	6.2900	4.3100
207 2589	0000	0010	0000	0000	0000	1.7155	1.6190	2.4400	5.6400	2.5000
207 2590	0000	0010	0000	0000	0000	1.7375	1.6100	1.4600	4.8400	1.5200
207 2591	0000	0020	0000	0000	0000					

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2. Pack 208A, 5-cells

a. Cell information: (Same as Pack 207A, Section V. C. 1.).

b. Parameters:

Depth of Discharge (%)	80	Float/Trickle Current (amps)	.20
Charge Control	AE	Auxiliary Electrode:*	
Charge Current (amps)	3.0	Resistance (ohms)	300
Discharge Current (amps)	8.0	Trip Voltage (mv)	150
Temperature (°C)	0		

*--Cells 2 and 3.

c. Capacity checks: (Discharge to .50 volts any cell).

	Cell 1	Cell 2	Cell 3	Cell 4	Cell 5	ah out
Shadow 5 (Figure 65)	.815	.669	.479	.383	.938	16.57
Shadow 6 (Figure 66)	.853	.413	.038	.199	.834	16.66
Shadow 7 (Figure 67)	.959	.504	.517	.899	.870	15.97
Shadow 8 (Figure 68)	.910	.385	.419	.777	.805	14.60
Shadow 9 (Figure 69)	.940	.500	.490	.720	.660	15.78
Shadow 10 (Figure 70)	.885	.112	.170	.534	.807	16.75
Shadow 11	.954	.468	.650	.839	.749	15.70
Shadow 12 (Figure 71)	.899	.243	.433	.746	.566	15.41
Shadow 13 (Figure 72)	.873	.204	.319	.750	.556	15.72
Shadow 14 (Figure 73)	.935	.371	.358	.479	.479	15.14

d. Test results during Eclipse Seasons: (Figures 74 to 81).

(1) Average End of Discharge Voltages: The reconditioning effect, due to the capacity checks, can be seen for each period. The average voltage increased by 29 millivolts the day following the capacity check during period 14.

(2) Average Cell Voltages at Trip and End of Charge: The end of charge voltages were always lower than the trip voltages for the first 8 periods. This has been reversed during all the succeeding periods. The end of charge voltages have steadily increased each period to where they have remained fairly constant (1.560 volts) the last 4 periods. The trip voltages increased at the beginning of each period, starting with period 9, due to the auxiliary electrodes appearing to become "desensitized" during the preceding sun period. This condition would last from 2 to 7 days into the shadow before the electrodes regained their sensitivity.

(3) The pressure increase, at the beginning of period 13, was due to a malfunction in the control unit which allowed the pack to be overcharged at the 3.0 ampere rate for 10 minutes. It is observed that the increase in pressure (20 psia) did not readily recombine which indicates the pressure generated was mostly hydrogen.

e. Performance during Sun Periods: The pack began test with a shadow period and has now completed 14 sun periods. The pressures, cell 1, have not exceeded 10 psia during any period. Following is a listing of the high, average and low cell voltages at the start and end of sun periods 5 through 14.

SUN PERIODS

	5		6		7		8	
	Start	End	Start	End	Start	End	Start	End
<u>Voltages**</u>								
High	1.531(2)	1.505(4)	1.514(2)	1.510(4)	1.528(2)	1.509(4)	1.538(2)	1.513(4)
Average	1.501	1.480	1.487	1.465	1.494	1.470	1.504	1.466
Low	1.450(1)	1.440(2)	1.440(1)	1.434(2)	1.440(1)	1.425(2)	1.453(1)	1.416(2)
	9		10		11		12	
	Start	End	Start	End	Start	End	Start	End
<u>Voltages</u>								
High	1.575(2)	1.528(4)	1.594(2)	1.538(4)	1.620(3)	1.570(4)	1.601(3)	1.645(4)
Average	1.487	1.470	1.538	1.448	1.567	1.474	1.554	1.520
Low	1.447(1)	1.403(2)	1.452(1)	1.401(3)	1.480(1)	1.400(2)	1.468(1)	1.425(1)
	13		14					
	Start	End	Start	End				
<u>Voltages</u>								
High	1.638(4)	1.602(4)	1.604(2)	1.633(4)				
Average	1.603	1.464	1.538	1.538				
Low	1.544(1)	1.383(2)	1.456(1)	1.416(1)				

**--Indicates which cell.

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KEY
 * HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 2085
 SHADOW PERIOD IS 5
 CYCLE NUMBER IS 750
 DISCHARGE RATE IS 8.0

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AMPERE HOUR OUT

13 2.10 3.70 6.09 7.69 9.23 11.42 13.01 14.53 15.96
 1.05 2.90 4.49 6.89 8.49 10.09 12.22 13.78 15.26 16.57

C A P A C I T Y C E L L V O L T A G E S C A L E

00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 00

1. 16. 28. 34. 45. 52. 58. 64. 70. 76. 82. 86. 98. 110. 122. 128.

TIME IN MINUTES
 CELLS INCLUDED V1 V2 V3 V4 V5

FIGURE 65

KEY
 • HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 208A
 SHADOW PERIOD IS 6
 CYCLE NUMBER IS 932
 DISCHARGE RATE IS 8.0

AMPERE HOUR OUT

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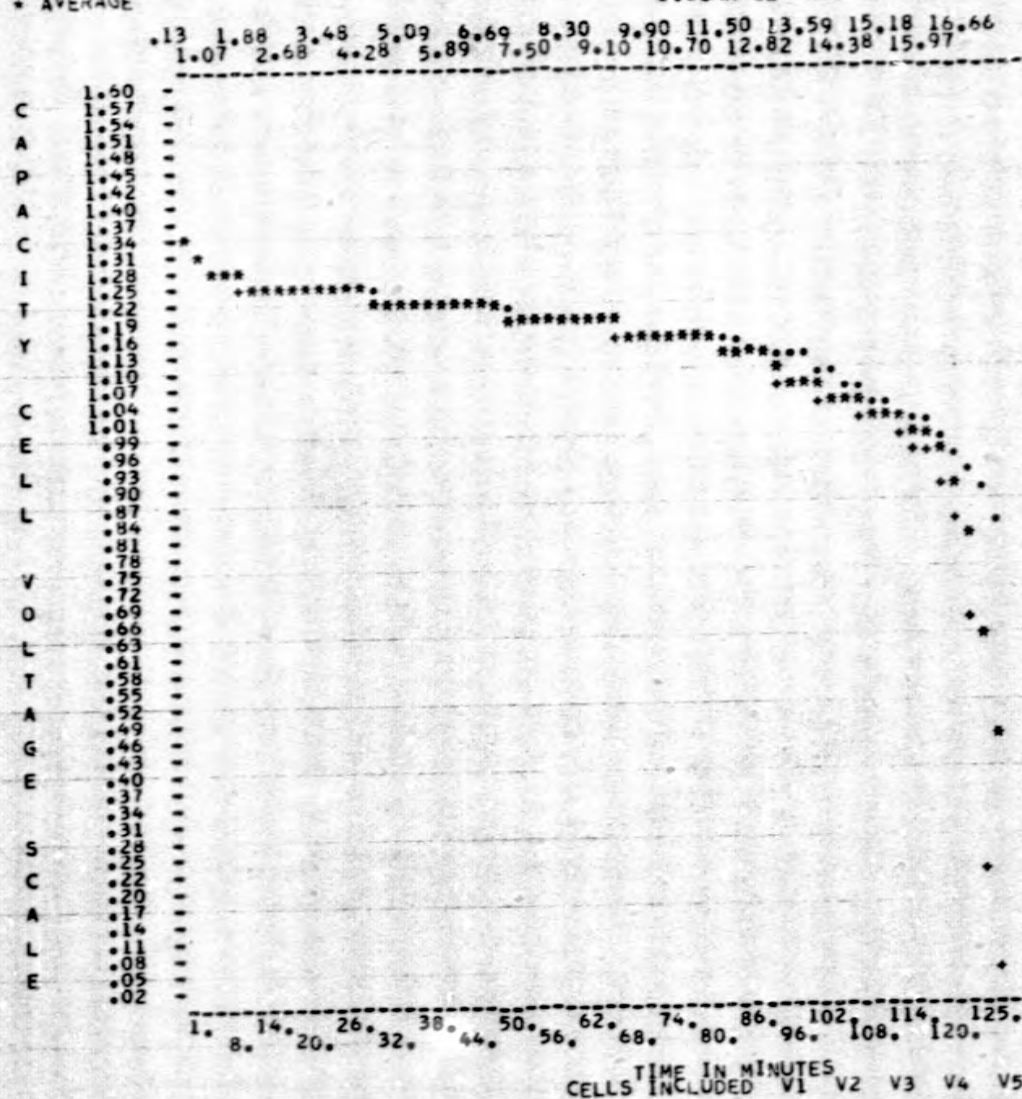


FIGURE 66

MOEC/C 77-134

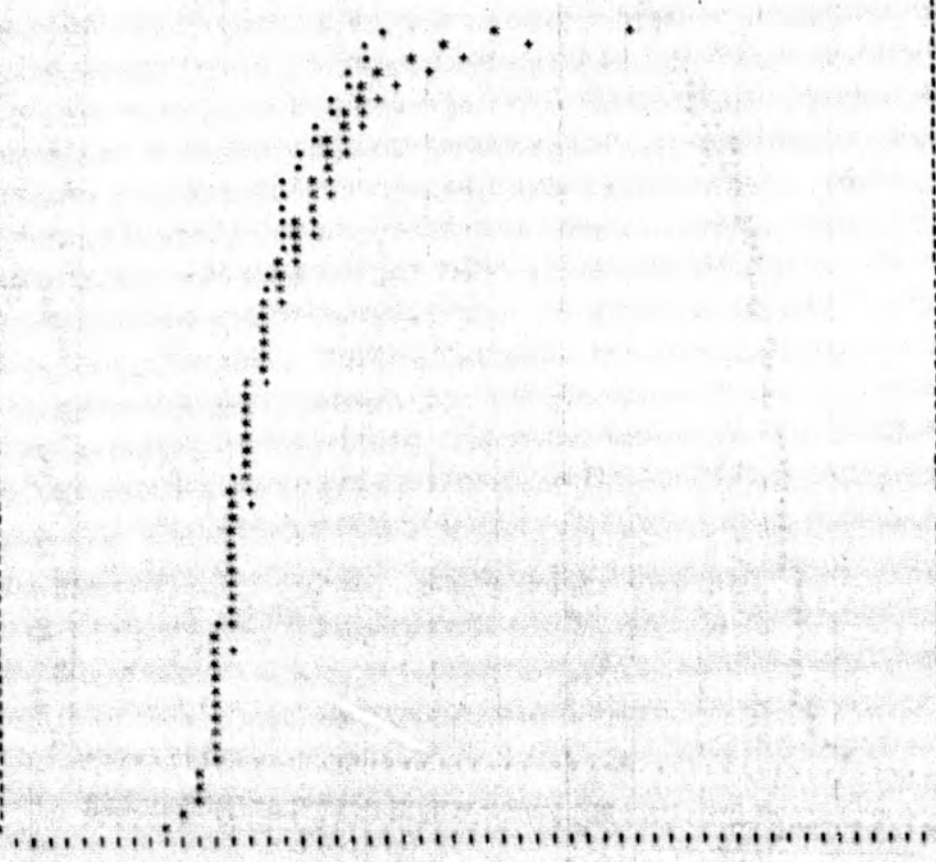
PACK NUMBER IS 208A
SHADOW PERIOD IS 7.114
CYCLE NUMBER IS 114
DISCHARGE RATE IS 8.0

AMPERE HOUR OUT

1. 1.88 3.43 5.04 6.62 8.22 9.82 11.42 13.02 14.54 15.97
2. 1.05 2.63 4.23 5.83 7.42 9.02 10.62 12.22 13.80 15.02

KEY
* HIGH CELL
+ LOW CELL
* AVERAGE

C A P A C I T Y C E L L V O L T A G E S C A L E



1. 1. 14. 20. 26. 32. 38. 44. 50. 56. 62. 68. 74. 80. 86. 92. 98. 104. 110. 120.
2. 8. 14. 20. 26. 32. 38. 44. 50. 56. 62. 68. 74. 80. 86. 92. 98. 104. 110. 120.

CELLS INCLUDED V1 V2 V3 V4 V5
TIME IN MINUTES

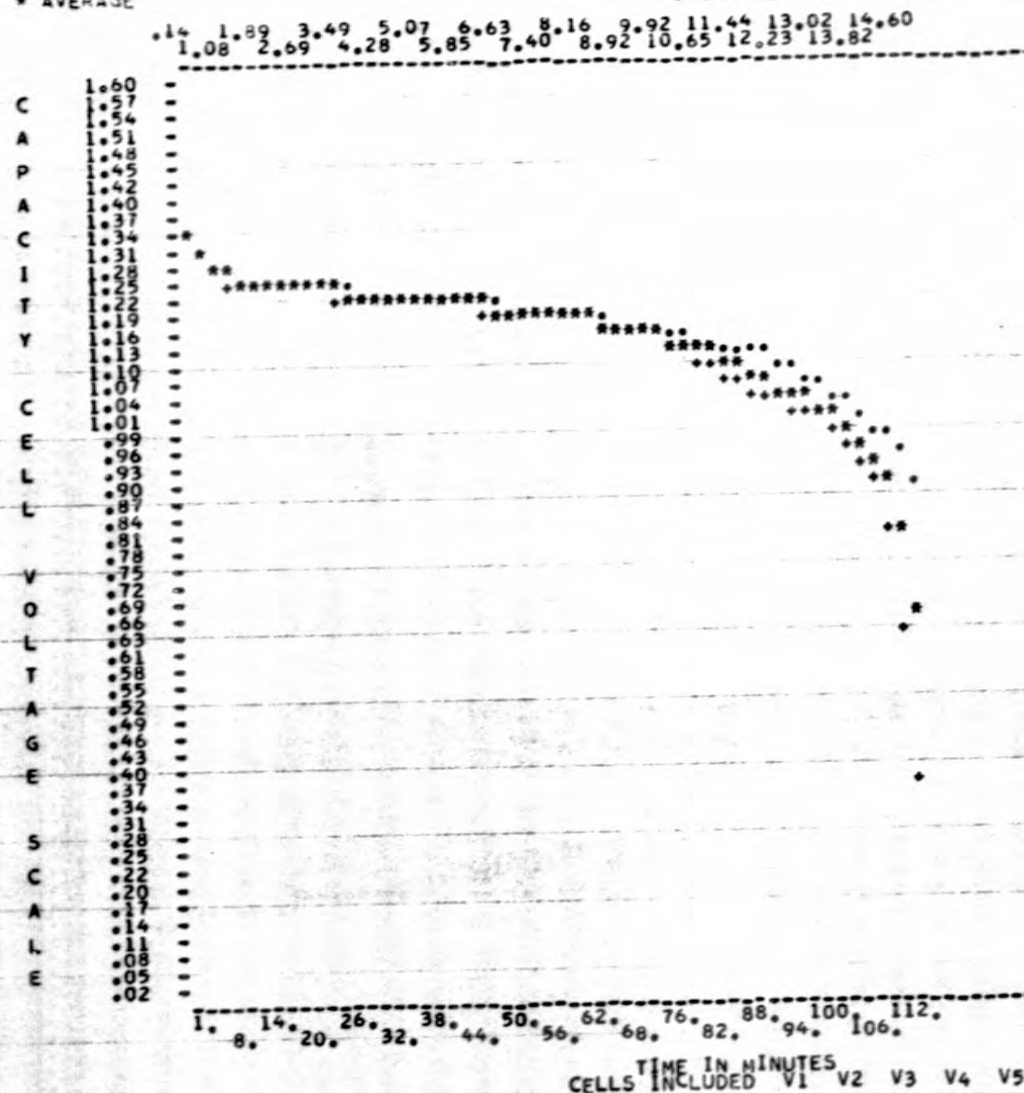
FIGURE 67

KEY:
 * HIGH CELL
 * LOW CELL
 * AVERAGE

PACK NUMBER IS 208A
 SHADOW PERIOD IS 8
 CYCLE NUMBER IS 1296
 DISCHARGE RATE IS 8.0

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AMPERE HOUR OUT



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FIGURE 68

KEY
 • HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 208A
 SHADOW PERIOD IS 9
 CYCLE NUMBER IS 1477
 DISCHARGE RATE IS 8.0

WQEC/C 77-134

AMPERE HOUR OUT

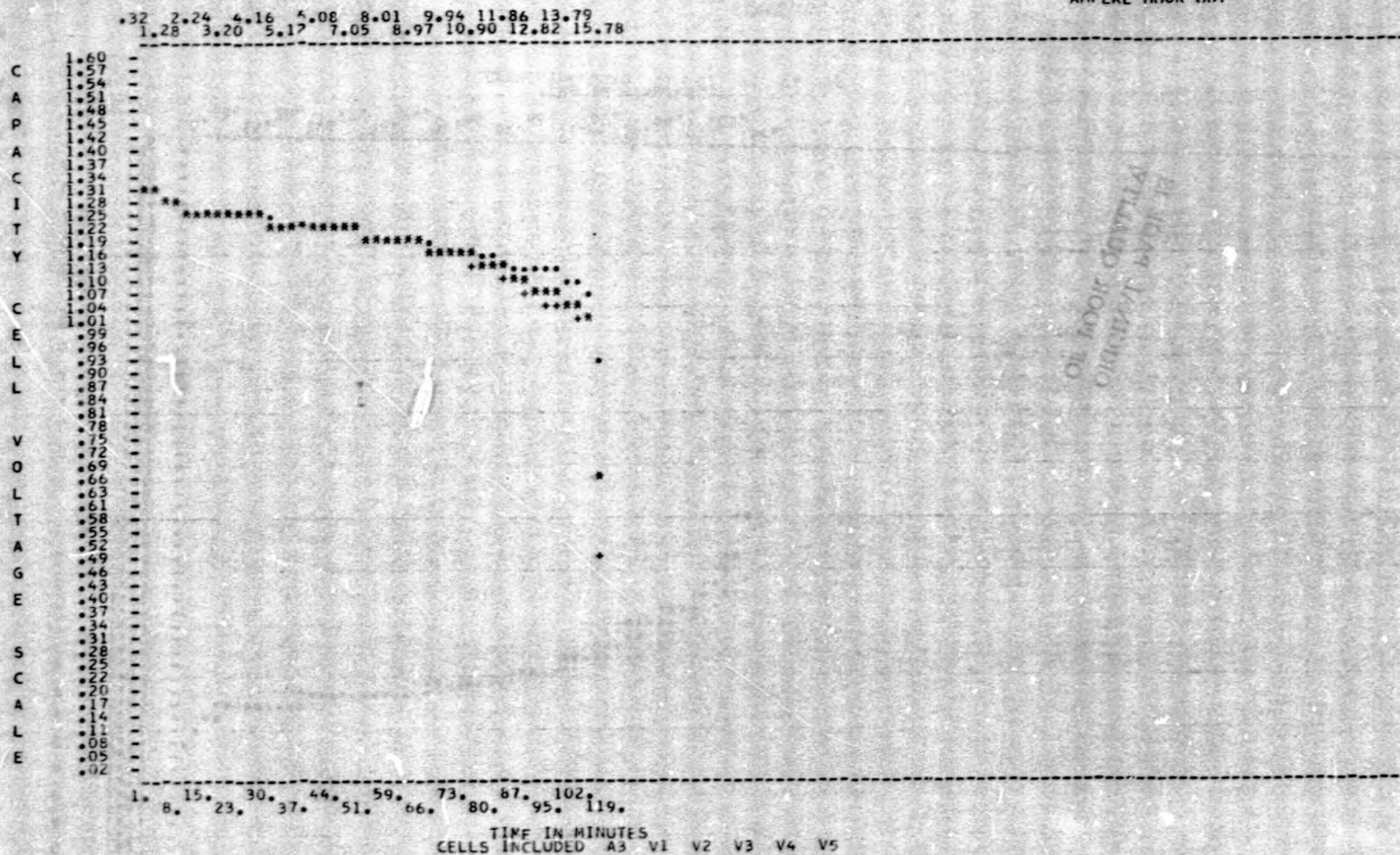


FIGURE 69

KEY
 • HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 208A
 SHADOW PERIOD IS 10
 CYCLE NUMBER IS 1635.
 DISCHARGE RATE IS 8.0

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AMPERE HOUR OUT

•32 2.25 4.19 6.12 8.05 9.99 11.92 13.85 16.11
 1.29 3.22 5.15 7.09 9.02 10.95 12.89 14.82 16.75

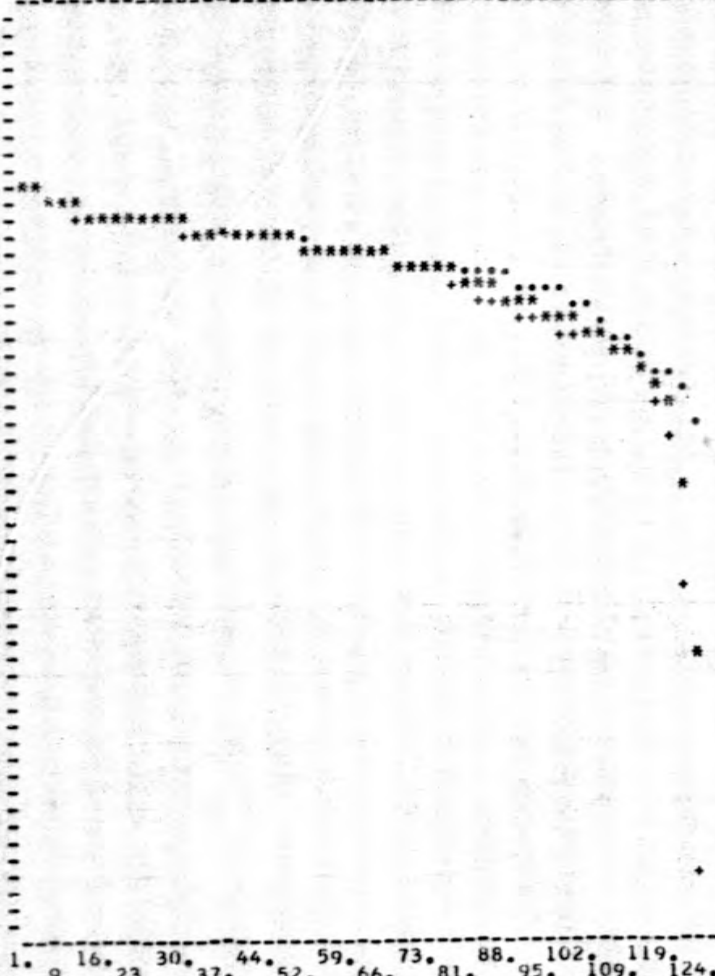
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2



TIME IN MINUTES
 CELLS INCLUDED A3 V1 V2 V3 V4 V5

FIGURE 70

ORIGINAL PAGE IS
 OF POOR QUALITY.

KEY
 • HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 208A
 SHADOW PERIOD IS 12
 CYCLE NUMBER IS 2123.
 DISCHARGE RATE IS 8.0

WQEC/C 77-134

AMPERE HOUR OUT

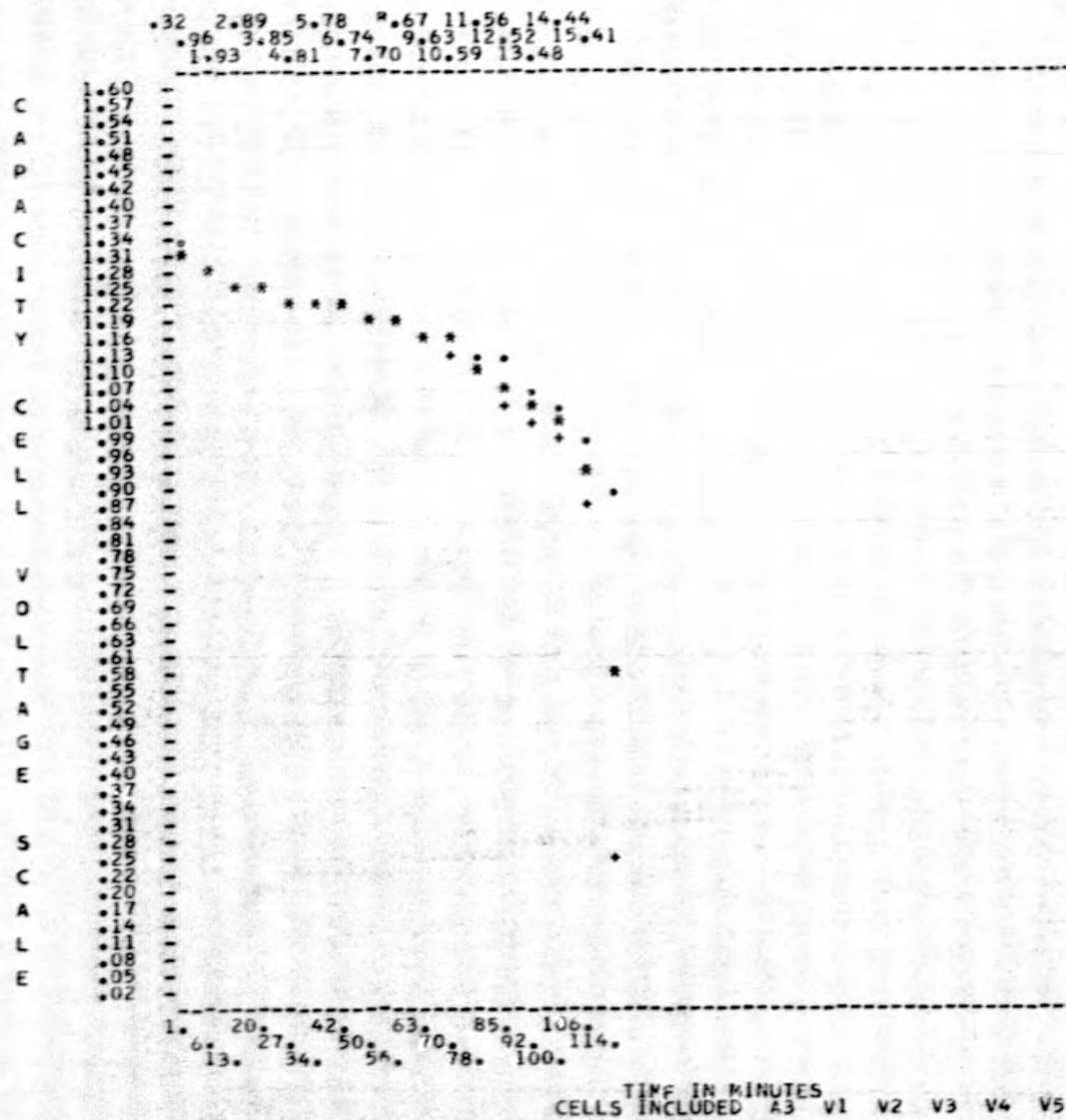


FIGURE 71

KEY
 • HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 208A
 SHADOW PERIOD IS 13
 CYCLE NUMBER IS 2402.
 DISCHARGE RATE IS 8.0

WQEC/C 77-134

AMPERE HOUR OUT

0.32 2.24 5.13 8.02 12.84 15.72
 1.28 3.21 6.09 8.78 13.80
 1.60 4.17 7.06 9.94 14.76

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ORIGINAL PAGE IS
 OF POOR QUALITY

TIME IN MINUTES
 CELLS INCLUDED V1 V2 V3 V4 V5

FIGURE 72

KEY
 * HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 208A
 SHADOW PERIOD IS 14
 CYCLE NUMBER IS 2584.
 DISCHARGE RATE IS 8.0

WQEC/C 77-134

AMPERE HOUR OUT

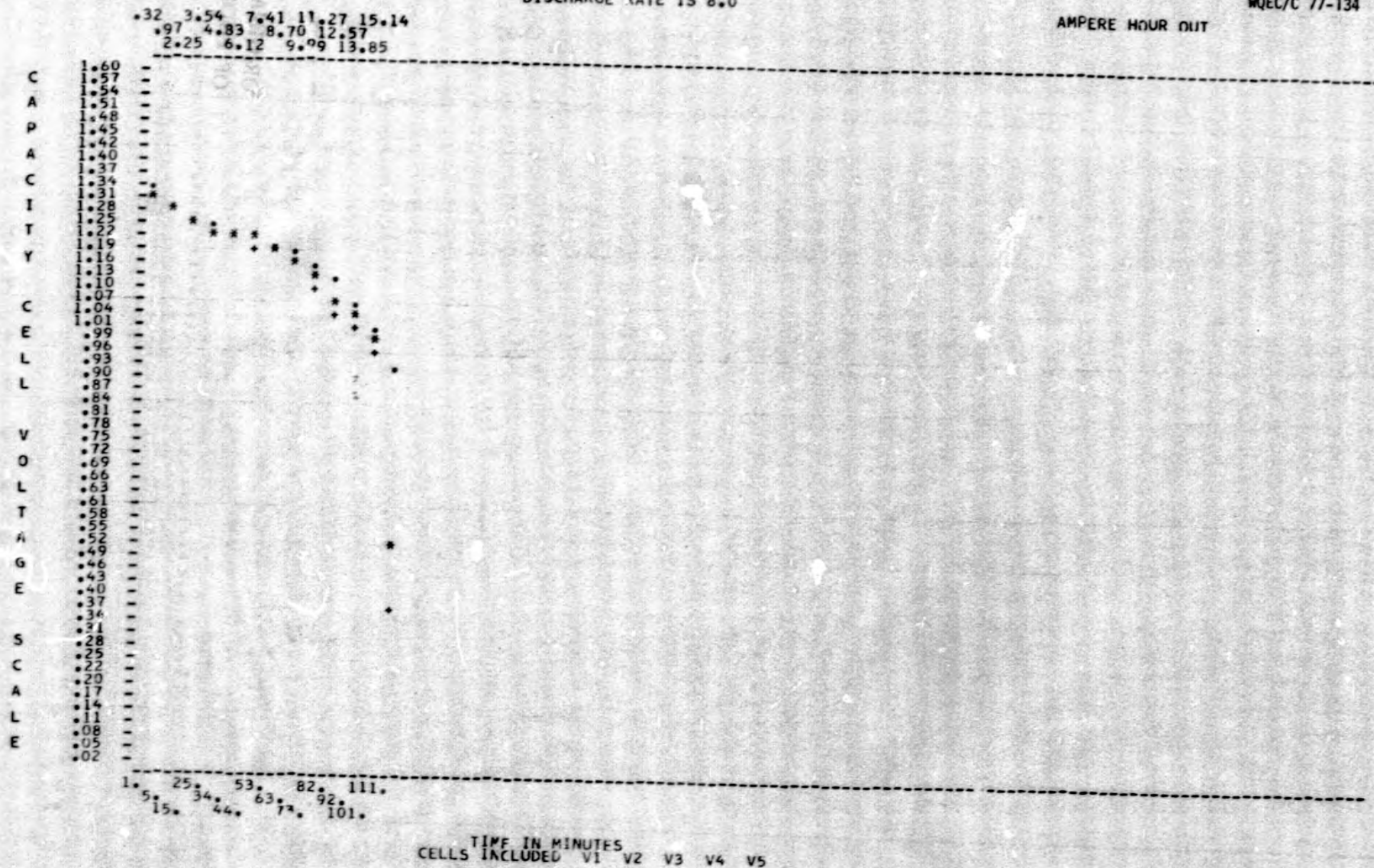


FIGURE 73

KEY
 * AVE. END DISCHARGE VOLTAGE
 • AVE. CELL VOLTAGE AT TRIP
 • AVE. CELL VOLTAGE AT EOC
 A AVE. AUX-ELECT. VOLT. AT EOD
 B AVE. AUX-ELECT. VOLT. AT TRIP
 X PRESSURE TRANS. AT EOD
 Y PRESSURE TRANS. AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 208A

DEPTH DISCHARGE 80 WQEC/C 77-134
 TEMPERATURE 00
 AMPERE RATE 12
 CATALOG 428012AB
 SERIAL 10003,9006,12,10013,14
 GENERAL ELECTRIC CELLS
 PROJECT AT5 F/G (Prototype)

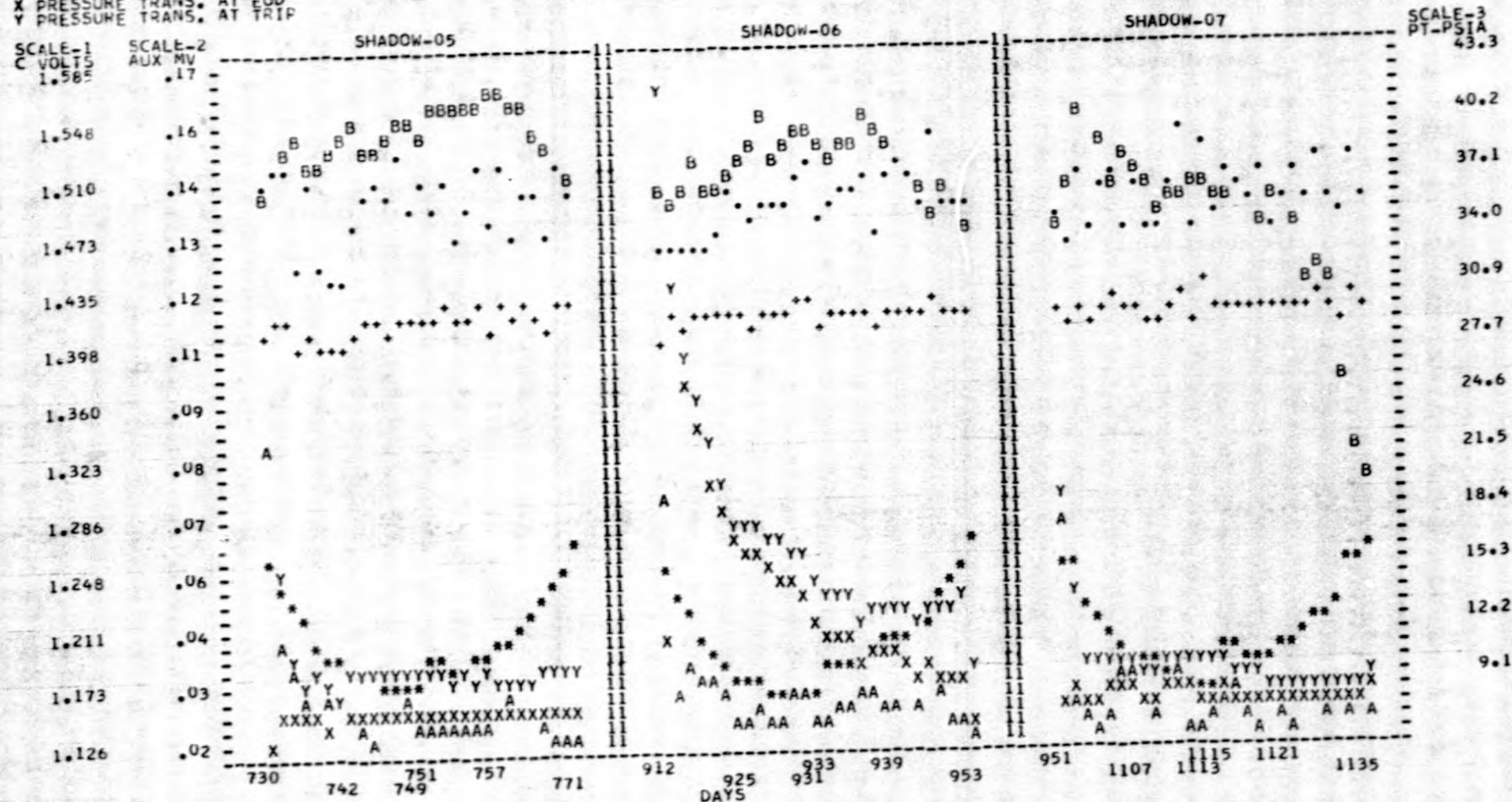


FIGURE 74

ORIGINAL PAGE IS
 OF POOR QUALITY

KEY
 * AVE END DISCHARGE VOLTAGE
 * AVE CELL VOLTAGE AT TRIP
 * AVE CELL VOLTAGE AT EOC
 A AVE AUX-ELECT. VOLT. AT EOD
 B AVE AUX-ELECT. VOLT. AT TRIP
 X PRESSURE TRANS. AT EOD
 Y PRESSURE TRANS. AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 208A

DEPTH DISCHARGE 80
 TEMPERATURE 00 WQEC/C 77-134
 AMPERE RATE 12
 CATALOG 428012AB
 SERIAL 10003, 9006, 12, 10013, 14
 GENERAL ELECTRIC CELLS
 PROJECT ATS F/G (Prototype)

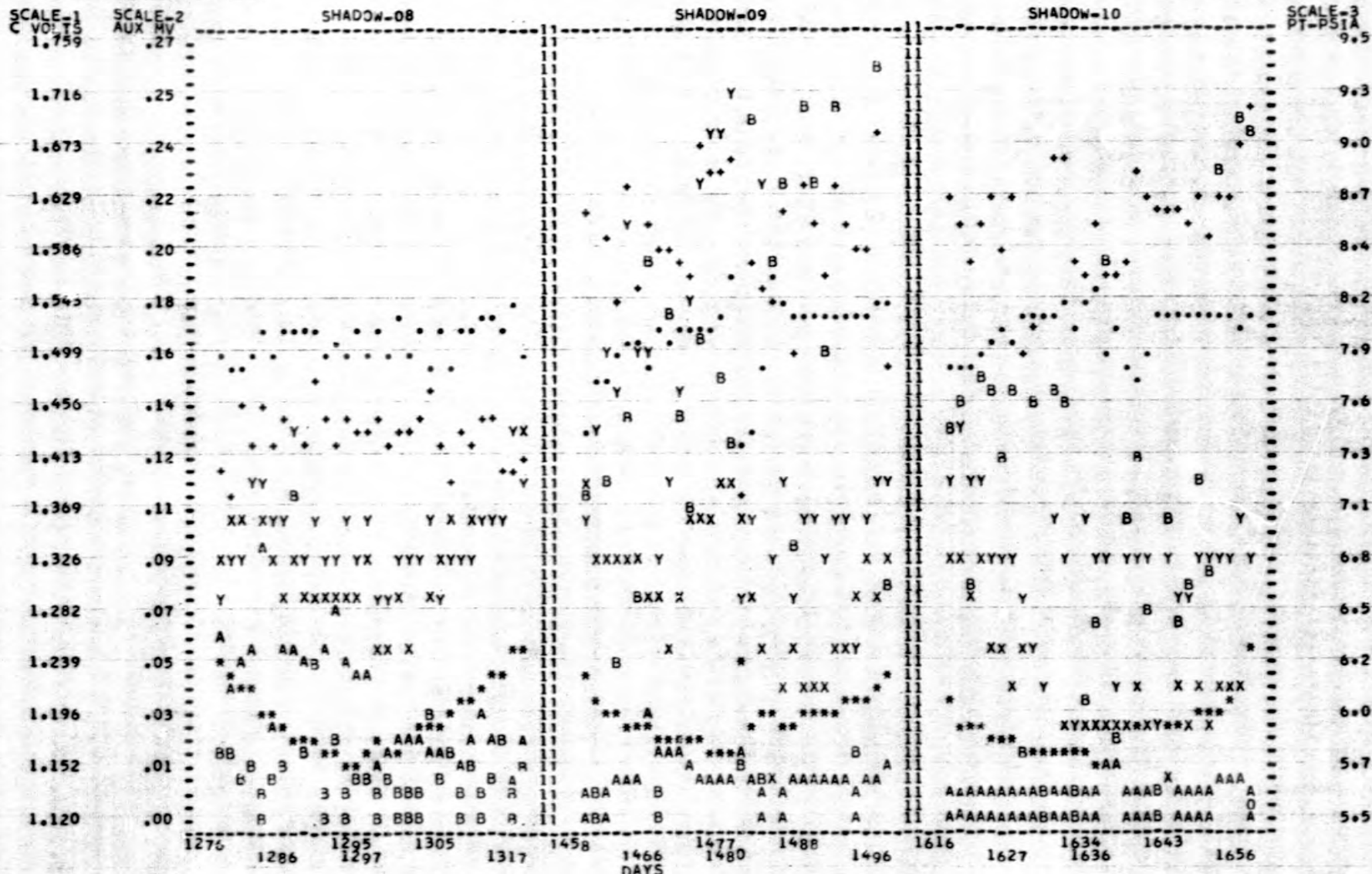


FIGURE 75

KEY
 * AVE END DISCHARGE VOLTAGE
 + AVE CELL VOLTAGE AT TRIP
 A AVE CELL VOLTAGE AT EOC
 B AVE AUX-ELECT. VOLT. AT EOD
 X AVE AUX-ELECT. VOLT. AT TRIP
 Y PRESSURE TRANS. AT EOD
 Y PRESSURE TRANS. AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 208A

DEPTH DISCHARGE 80
 TEMPERATURE 00
 AMPERE RATE 12
 CATALOG 425012AB
 SERIAL 10003, 9006, 12, 10013, 14
 GENERAL ELECTRIC CELLS
 PROJECT AT5 F/G (Prototype)
 WQEC/C 77-134

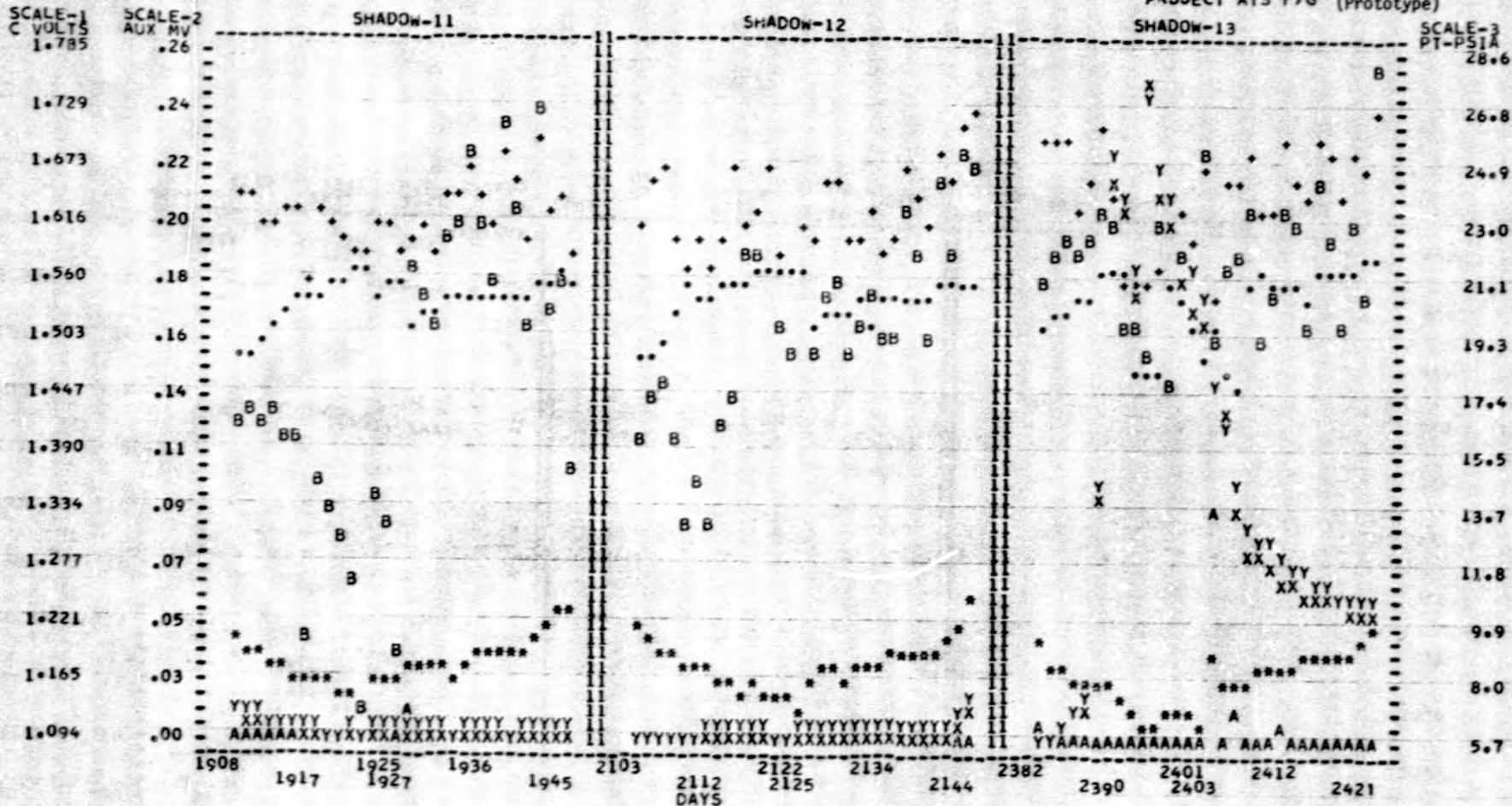


FIGURE 76

KEY
 * AVE END DISCHARGE VOLTAGE
 + AVE CELL VOLTAGE AT TRIP
 A AVE CELL VOLTAGE AT EOC
 B AVE AUX-ELECT. VOLT. AT EOD
 X AVE AUX-ELECT. VOLT. AT TRIP
 Y PRESSURE TRANS. AT EOD
 Y PRESSURE TRANS. AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 208A

DEPTH DISCHARGE 80
 TEMPERATURE 00
 AMPERE RATE 12
 CATALOG 428012AB
 SERIAL 10003, 9006, 12, 10013, 14
 GENERAL ELECTRIC CELLS
 PROJECT AT5 F/G (Prototype)

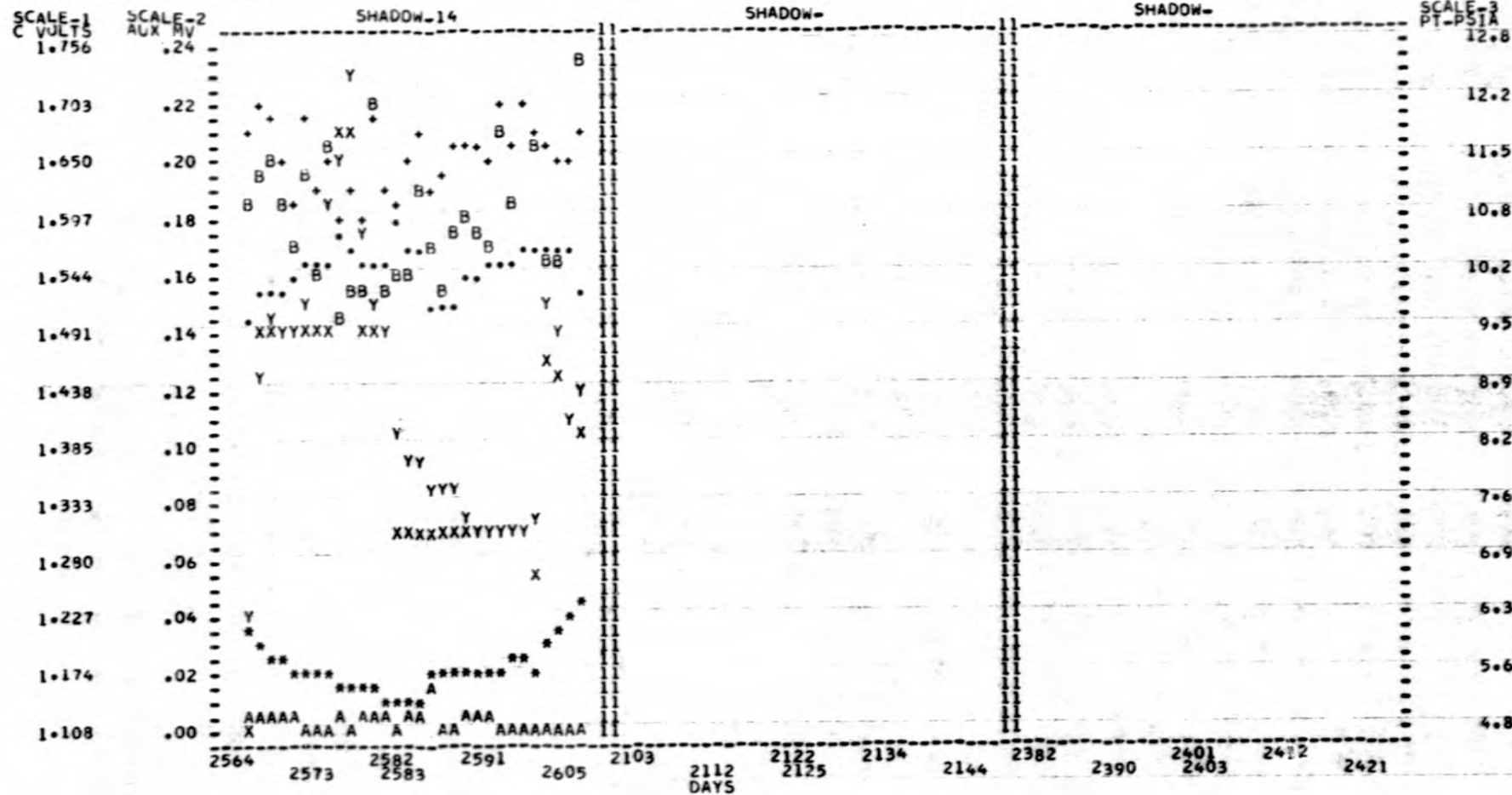


FIGURE 77

KEY
 * AHD
 * AHI-TOTAL
 * AHI AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 208A

DEPTH DISCHARGE 80 WQEC/C 77-134
 TEMPERATURE 00
 AMPERE RATE 12
 CATALOG 428012AB
 SERIAL 10003, 9006, 12, 10013, 14
 GENERAL ELECTRIC CELLS
 PROJECT AT5 F/G (Prototype)

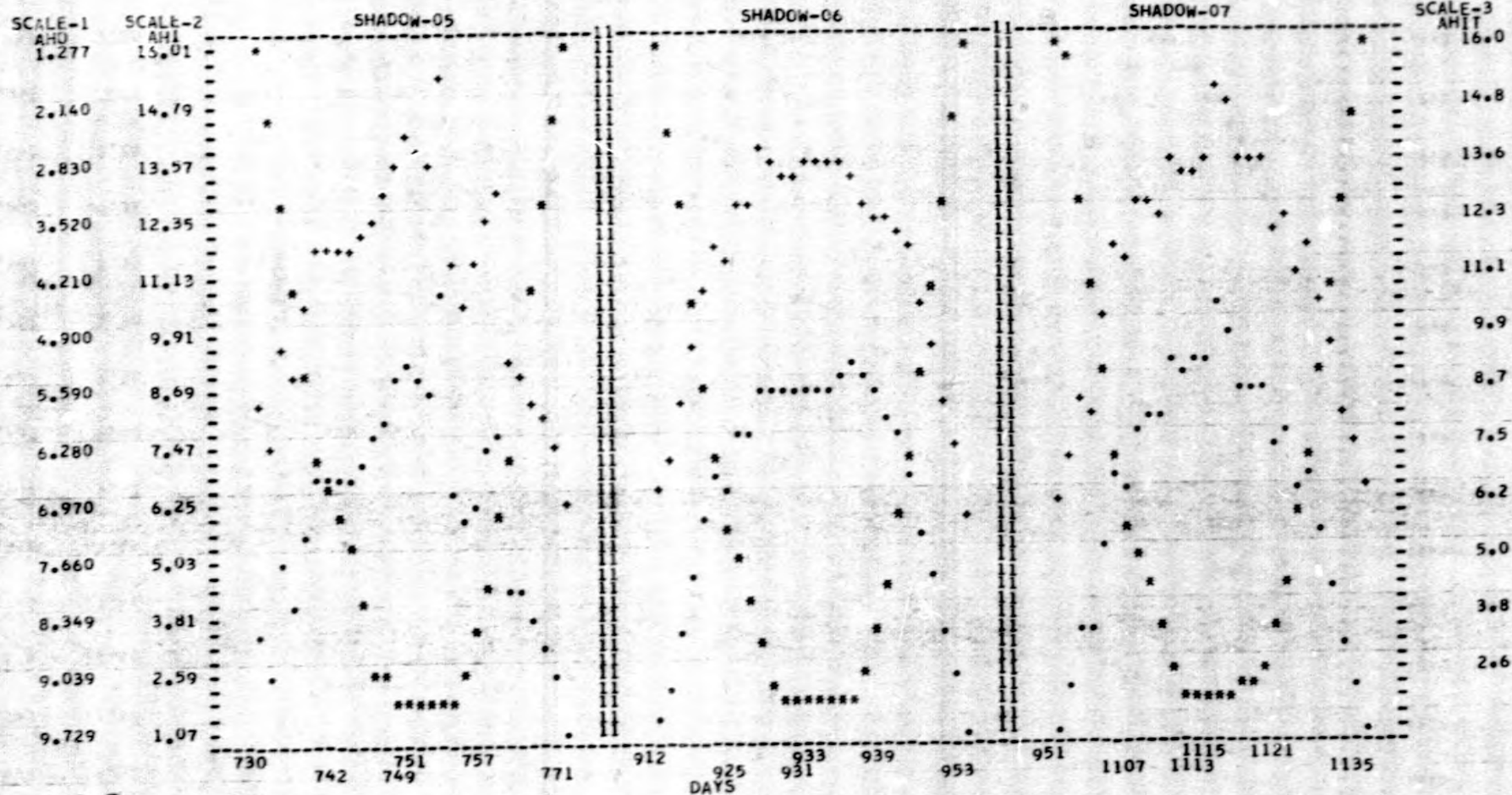


FIGURE 78

ORIGINAL PAGE IS
 OF POOR QUALITY

KEY
 * AHO
 + AHI-TOTAL
 . AHI AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 208A

DEPTH DISCHARGE 80
 TEMPERATURE 00
 AMPERE RATE 12
 CATALOG 42801248
 SERIAL 10003, 9006, 12, 10013, 14
 GENERAL ELECTRIC CFLS
 PROJECT ATS F/G (Prototype)

WQEC/C 77-134

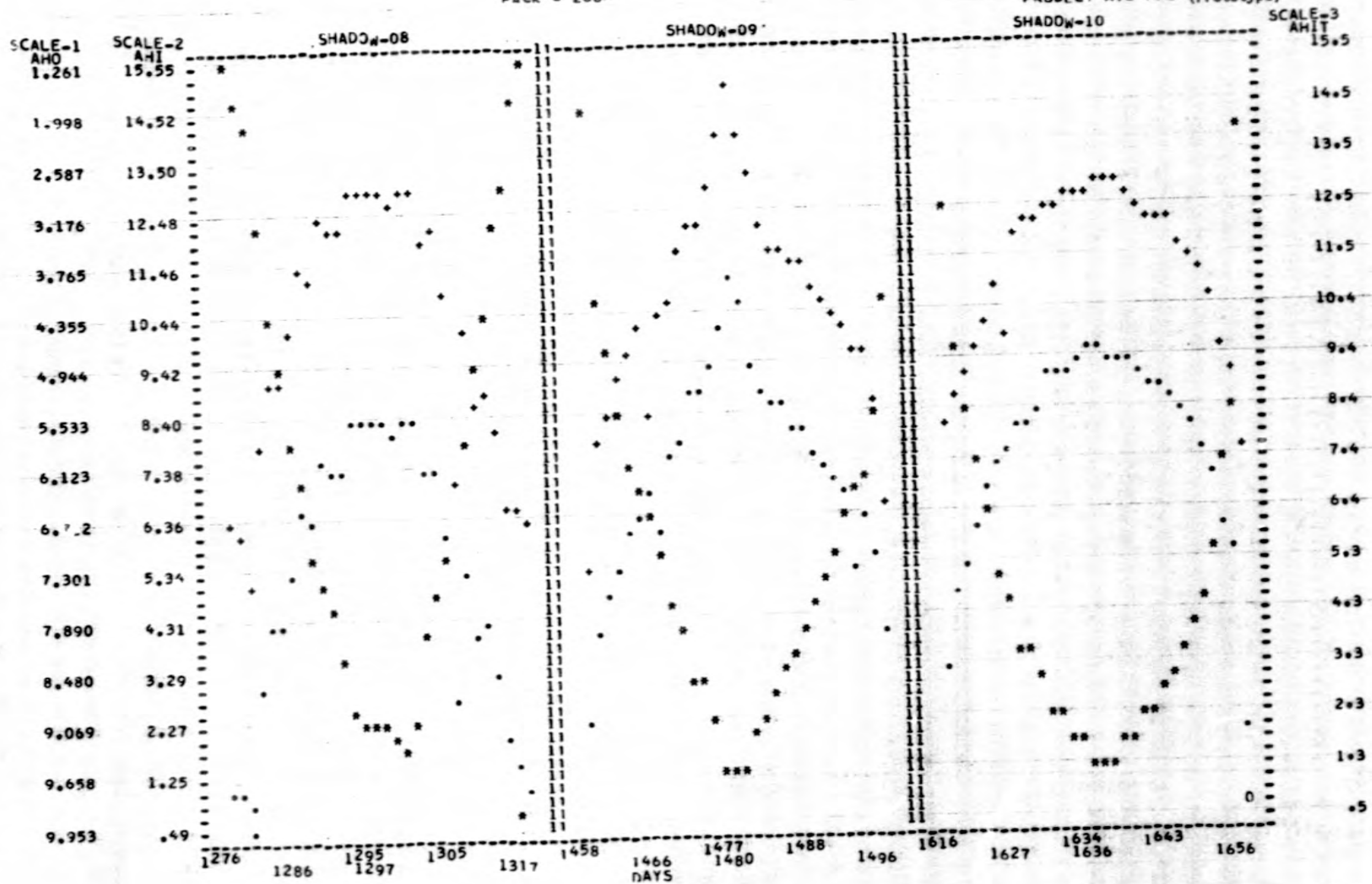


FIGURE 79

* A
 * AMI-TOTAL
 * AMI AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 208A

DEPTH DISCHARGE 80
 TEMPERATURE 00
 AMPERE RATE 12 WQEC/C 77-134
 CATALOG 42B012AB
 SERIAL 10003,9006,12,10013,14
 GENERAL ELECTRIC CELLS
 PROJECT AT5 F/G (Prototype)

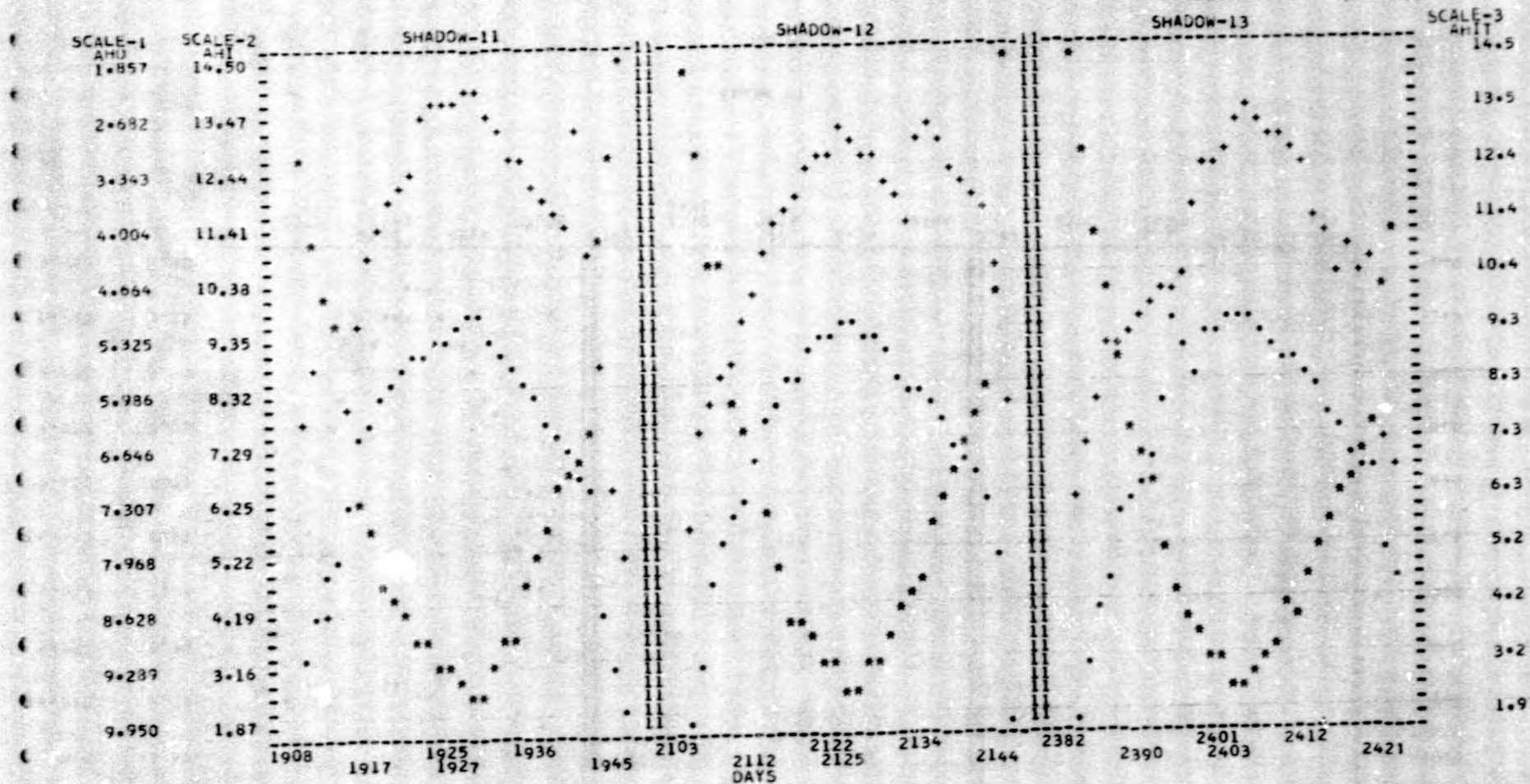


FIGURE 80

* AH1
+ AH1-TOTAL
• AH1 AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 208A

DEPTH DISCHARGE 80
TEMPERATURE 00
AMPERE RATE 12
CATALOG 428012AB
SERIAL 10003,9006,12,10013,14
GENERAL ELECTRIC CELLS
PROJECT AT5 F/G (Prototype)
WQEC/C 77-134

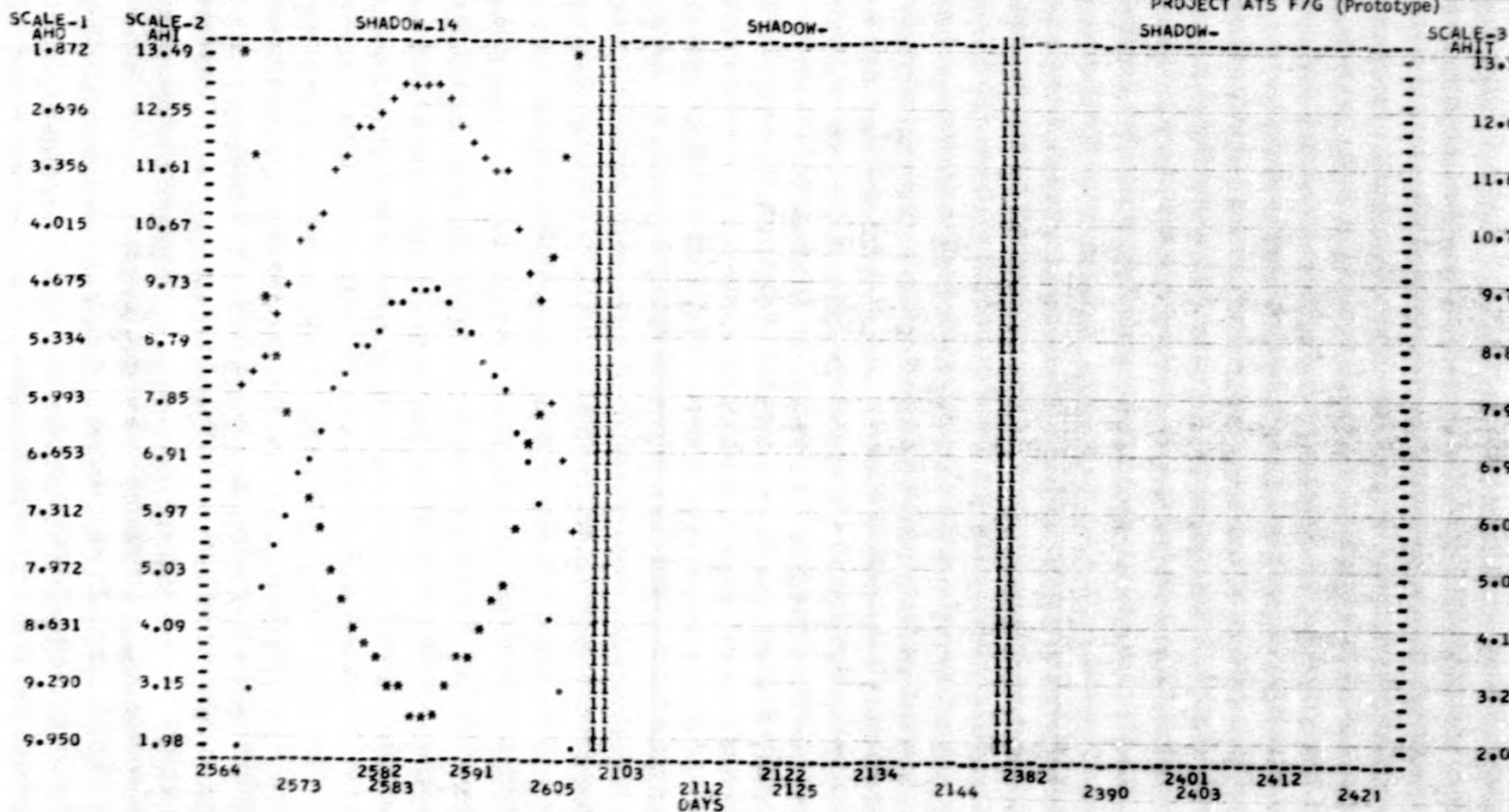


FIGURE 81

[illegible]

ORIGINAL PAGE IS
OF POOR QUALITY

DATE OF RUN IS 09/20/76

PACK NUMBER IS 208A

SHADOW PERIOD IS 5

CYCLF IS

750.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 120. | 15.735 | V1 | 1.004 | V2 | .946 | V3 | .950 | V4 | .989 | V5 | .995 | .000 | .977 | .946 |
| 122. | 15.964 | V1 | .988 | V2 | .912 | V3 | .921 | V4 | .959 | V5 | .981 | .000 | .954 | .912 |
| 124. | 16.187 | V1 | .961 | V2 | .862 | V3 | .867 | V4 | .927 | V5 | .962 | .000 | .916 | .862 |
| 126. | 16.396 | V1 | .909 | V2 | .775 | V3 | .704 | V4 | .768 | V5 | .944 | .000 | .820 | .704 |
| 128. | 16.575 | V1 | .815 | V2 | .669 | V3 | .479 | V4 | .383 | V5 | .938 | .000 | .657 | .383 |

DATE OF RUN IS 07/20/76

PACK NUMBER IS 208A

SHADOW PERIOD IS 6

CYCLE IS

932.

WQEC/ 7-134
PAGE IS 3.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 1. | 1333 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1333 | 1333 | 1333 |
| 2. | 5333 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 5333 | 5333 | 5333 |
| 3. | 8011 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 8011 | 8011 | 8011 |
| 4. | 070 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 070 | 070 | 070 |
| 5. | 339 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 339 | 339 | 339 |
| 6. | 607 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 607 | 607 | 607 |
| 7. | 876 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 876 | 876 | 876 |
| 8. | 144 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 144 | 144 | 144 |
| 9. | 211 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 211 | 211 | 211 |
| 10. | 466 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 466 | 466 | 466 |
| 11. | 78 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 78 | 78 | 78 |
| 12. | 213 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 213 | 213 | 213 |
| 13. | 481 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 481 | 481 | 481 |
| 14. | 749 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 749 | 749 | 749 |
| 15. | 017 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 017 | 017 | 017 |
| 16. | 285 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 285 | 285 | 285 |
| 17. | 553 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 553 | 553 | 553 |
| 18. | 821 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 821 | 821 | 821 |
| 19. | 089 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 089 | 089 | 089 |
| 20. | 357 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 357 | 357 | 357 |
| 21. | 624 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 624 | 624 | 624 |
| 22. | 892 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 892 | 892 | 892 |
| 23. | 160 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 160 | 160 | 160 |
| 24. | 427 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 427 | 427 | 427 |
| 25. | 694 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 694 | 694 | 694 |
| 26. | 962 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 962 | 962 | 962 |
| 27. | 230 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 230 | 230 | 230 |
| 28. | 497 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 497 | 497 | 497 |
| 29. | 765 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 765 | 765 | 765 |
| 30. | 032 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 032 | 032 | 032 |
| 31. | 299 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 299 | 299 | 299 |
| 32. | 567 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 567 | 567 | 567 |
| 33. | 835 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 835 | 835 | 835 |
| 34. | 102 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 102 | 102 | 102 |
| 35. | 369 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 369 | 369 | 369 |
| 36. | 637 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 637 | 637 | 637 |
| 37. | 904 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 904 | 904 | 904 |
| 38. | 171 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 171 | 171 | 171 |
| 39. | 438 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 438 | 438 | 438 |
| 40. | 706 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 706 | 706 | 706 |
| 41. | 972 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 972 | 972 | 972 |
| 42. | 240 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 240 | 240 | 240 |
| 43. | 508 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 508 | 508 | 508 |
| 44. | 776 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 776 | 776 | 776 |
| 45. | 044 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 044 | 044 | 044 |
| 46. | 311 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 311 | 311 | 311 |
| 47. | 579 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 579 | 579 | 579 |
| 48. | 847 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 847 | 847 | 847 |
| 49. | 115 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 115 | 115 | 115 |
| 50. | 382 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 382 | 382 | 382 |
| 51. | 650 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 650 | 650 | 650 |
| 52. | 918 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 918 | 918 | 918 |
| 53. | 186 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 186 | 186 | 186 |
| 54. | 454 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 454 | 454 | 454 |
| 55. | 722 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 722 | 722 | 722 |
| 56. | 990 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 990 | 990 | 990 |
| 57. | 258 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 258 | 258 | 258 |
| 58. | 526 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 526 | 526 | 526 |
| 59. | 794 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 794 | 794 | 794 |
| 60. | 062 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 062 | 062 | 062 |
| 61. | 330 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 330 | 330 | 330 |
| 62. | 598 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 598 | 598 | 598 |
| 63. | 866 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 866 | 866 | 866 |
| 64. | 134 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 134 | 134 | 134 |
| 65. | 402 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 402 | 402 | 402 |
| 66. | 670 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 670 | 670 | 670 |
| 67. | 938 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 938 | 938 | 938 |
| 68. | 206 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 206 | 206 | 206 |
| 69. | 474 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 474 | 474 | 474 |
| 70. | 742 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 742 | 742 | 742 |
| 71. | 010 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 010 | 010 | 010 |
| 72. | 278 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 278 | 278 | 278 |
| 73. | 546 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 546 | 546 | 546 |
| 74. | 814 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 814 | 814 | 814 |
| 75. | 082 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 082 | 082 | 082 |
| 76. | 350 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 350 | 350 | 350 |
| 77. | 618 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 618 | 618 | 618 |
| 78. | 886 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 886 | 886 | 886 |
| 79. | 154 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 154 | 154 | 154 |
| 80. | 422 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 422 | 422 | 422 |
| 81. | 690 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 690 | 690 | 690 |
| 82. | 958 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 958 | 958 | 958 |
| 83. | 226 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 226 | 226 | 226 |
| 84. | 494 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 494 | 494 | 494 |
| 85. | 762 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 762 | 762 | 762 |
| 86. | 030 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 030 | 030 | 030 |
| 87. | 298 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 298 | 298 | 298 |
| 88. | 566 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 566 | 566 | 566 |
| 89. | 834 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 834 | 834 | 834 |
| 90. | 102 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 102 | 102 | 102 |
| 91. | 370 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 370 | 370 | 370 |
| 92. | 638 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 638 | 638 | 638 |
| 93. | 906 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 906 | 906 | 906 |
| 94. | 174 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 174 | 174 | 174 |
| 95. | 442 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 442 | 442 | 442 |
| 96. | 710 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 710 | 710 | 710 |
| 97. | 978 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 978 | 978 | 978 |
| 98. | 246 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 246 | 246 | 246 |
| 99. | 514 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 514 | 514 | 514 |
| 100. | 782 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 782 | 782 | 782 |

ORIGINAL PAGE IS
OF POOR QUALITY

DATE OF RUN IS 09/20/76

PACK NUMBER IS 208A

SHADOW PERIOD IS 6

CYCLE IS

932.

WELL/L 77-134
PAGE IS 4.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 112. | 14.911 | V1 | 1.029 | V2 | .989 | V3 | .988 | V4 | 1.009 | 1.009 | 1.029 | .988 |
| 114. | 15.177 | V1 | 1.007 | V2 | .969 | V3 | .970 | V4 | .997 | .990 | 1.017 | .969 |
| 116. | 15.442 | V1 | 1.006 | V2 | .946 | V3 | .949 | V4 | .986 | .974 | 1.006 | .946 |
| 118. | 15.707 | V1 | .991 | V2 | .908 | V3 | .918 | V4 | .967 | .949 | .991 | .908 |
| 120. | 15.971 | V1 | .967 | V2 | .836 | V3 | .854 | V4 | .932 | .905 | .967 | .836 |
| 122. | 16.235 | V1 | .922 | V2 | .686 | V3 | .665 | V4 | .840 | .809 | .922 | .665 |
| 124. | 16.478 | V1 | .900 | V2 | .513 | V3 | .238 | V4 | .699 | .641 | .900 | .238 |
| 125. | 16.660 | V1 | .853 | V2 | .413 | V3 | .038 | V4 | .199 | .467 | .853 | .038 |

DATE OF RUN IS 09/14/76

PACK NUMBER IS 208A

SHADOW PERIOD IS 7

CYCLE IS

1114.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 100 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.342 | 1.343 | 1.341 |
| 101 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.306 | 1.307 | 1.305 |
| 102 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.287 | 1.288 | 1.286 |
| 103 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.274 | 1.275 | 1.273 |
| 104 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.266 | 1.267 | 1.265 |
| 105 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.257 | 1.258 | 1.256 |
| 106 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.253 | 1.254 | 1.252 |
| 107 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.248 | 1.249 | 1.247 |
| 108 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.243 | 1.244 | 1.242 |
| 109 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.241 | 1.242 | 1.240 |
| 110 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.237 | 1.238 | 1.236 |
| 111 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.236 | 1.237 | 1.235 |
| 112 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.233 | 1.234 | 1.232 |
| 113 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.228 | 1.229 | 1.227 |
| 114 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.226 | 1.227 | 1.225 |
| 115 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.221 | 1.222 | 1.220 |
| 116 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.218 | 1.219 | 1.217 |
| 117 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.215 | 1.216 | 1.214 |
| 118 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.211 | 1.212 | 1.210 |
| 119 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.208 | 1.209 | 1.207 |
| 120 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.206 | 1.207 | 1.205 |
| 121 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.200 | 1.201 | 1.199 |
| 122 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.197 | 1.198 | 1.196 |
| 123 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.193 | 1.194 | 1.192 |
| 124 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.186 | 1.187 | 1.185 |
| 125 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.181 | 1.182 | 1.180 |
| 126 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.176 | 1.177 | 1.175 |
| 127 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.171 | 1.172 | 1.170 |
| 128 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.169 | 1.170 | 1.168 |
| 129 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.165 | 1.166 | 1.164 |
| 130 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.160 | 1.161 | 1.159 |
| 131 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.154 | 1.155 | 1.153 |
| 132 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.149 | 1.150 | 1.148 |
| 133 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.143 | 1.144 | 1.142 |
| 134 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.136 | 1.137 | 1.135 |
| 135 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.131 | 1.132 | 1.130 |
| 136 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.127 | 1.128 | 1.126 |
| 137 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.121 | 1.122 | 1.120 |
| 138 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.117 | 1.118 | 1.116 |
| 139 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.107 | 1.108 | 1.106 |
| 140 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.097 | 1.098 | 1.096 |
| 141 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.086 | 1.087 | 1.085 |
| 142 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.077 | 1.078 | 1.076 |
| 143 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.068 | 1.069 | 1.067 |
| 144 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.058 | 1.059 | 1.057 |
| 145 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.043 | 1.044 | 1.042 |
| 146 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.032 | 1.033 | 1.031 |
| 147 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.019 | 1.020 | 1.018 |
| 148 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.007 | 1.008 | 1.006 |
| 149 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 0.997 | 0.998 | 0.996 |
| 150 | 1.0000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 0.990 | 0.991 | 0.989 |

DATE OF RUN IS 09/14/76

PACK NUMBER IS 208A

SHADOW PERIOD IS 7

CYCLE IS

1114.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 108. | 14.290 | V1 | 1.047 | V2 | .984 | V3 | .971 | V4 | 1.012 | V5 | 1.010 | | |
| 110. | 14.549 | V1 | 1.033 | V2 | .982 | V3 | .950 | V4 | 1.003 | V5 | .999 | | |
| 112. | 14.780 | V1 | 1.022 | V2 | .997 | V3 | .921 | V4 | .991 | V5 | .982 | | |
| 114. | 15.020 | V1 | 1.010 | V2 | .891 | V3 | .875 | V4 | .974 | V5 | .965 | | |
| 116. | 15.220 | V1 | .996 | V2 | .817 | V3 | .749 | V4 | .961 | V5 | .945 | | |
| 118. | 15.500 | V1 | .980 | V2 | .687 | V3 | .680 | V4 | .933 | V5 | .916 | | |
| 120. | 15.970 | V1 | .959 | V2 | .504 | V3 | .517 | V4 | .899 | V5 | .870 | | |

DATE OF RUN IS 09/20/76

PACK NUMBER IS 208A

SHADOW PERIOD 15 8

CYCLF IS 1296.

1296.

PAGE 15 5.

[illegible]

DATE OF RUN IS 09/20/76

PACK NUMBER IS 208A

SHADOW PERIOD IS 8

CYCLE IS

1296.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|------|--------|--------|---------|---------|---------|---------|--------|--------|--------|-------|--------|-------|
| 110: | 14.342 | V1 | :852 V2 | :644 V3 | :677 V4 | :879 V5 | :882 | :000 | :000 | :000 | :807 | :644 |
| 112: | 14.605 | V1 | :910 V2 | :385 V3 | :419 V4 | :777 V5 | :805 | :000 | :000 | :000 | :859 | :385 |

| DATE OF RUN IS 08/27/76 | | PACK NUMBER IS 208A | | | | SHADOW PERIOD IS 9 | | CYCLE IS 1477. | | | | |
|-------------------------|------|---------------------|--------|--------|--------|--------------------|--------|----------------|-------|--------|-------|--|
| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V | |
| 1.40. | .321 | A3 | .010 | V1 | 1.321 | V2 | 1.319 | V3 | 1.319 | V4 | 1.322 | |
| 1.41. | .321 | A3 | .005 | V1 | 1.295 | V2 | 1.294 | V3 | 1.297 | V4 | .000 | |
| 1.42. | .642 | A3 | .004 | V1 | 1.278 | V2 | 1.277 | V3 | .000 | .000 | .000 | |
| 1.43. | .961 | A3 | .007 | V1 | 1.267 | V2 | 1.267 | V3 | .000 | .000 | .000 | |
| 1.44. | .281 | A3 | .009 | V1 | 1.260 | V2 | 1.260 | V3 | .000 | .000 | .000 | |
| 1.45. | .602 | A3 | .011 | V1 | 1.255 | V2 | 1.255 | V3 | .000 | .000 | .000 | |
| 1.46. | .923 | A3 | .014 | V1 | 1.249 | V2 | 1.249 | V3 | .000 | .000 | .000 | |
| 1.47. | .244 | A3 | .017 | V1 | 1.246 | V2 | 1.246 | V3 | .000 | .000 | .000 | |
| 1.48. | .565 | A3 | .019 | V1 | 1.243 | V2 | 1.243 | V3 | .000 | .000 | .000 | |
| 1.49. | .885 | A3 | .019 | V1 | 1.240 | V2 | 1.240 | V3 | .000 | .000 | .000 | |
| 1.50. | .205 | A3 | .017 | V1 | 1.239 | V2 | 1.239 | V3 | .000 | .000 | .000 | |
| 1.51. | .525 | A3 | .017 | V1 | 1.236 | V2 | 1.236 | V3 | .000 | .000 | .000 | |
| 1.52. | .845 | A3 | .017 | V1 | 1.233 | V2 | 1.233 | V3 | .000 | .000 | .000 | |
| 1.53. | .160 | A3 | .017 | V1 | 1.230 | V2 | 1.230 | V3 | .000 | .000 | .000 | |
| 1.54. | .480 | A3 | .017 | V1 | 1.227 | V2 | 1.227 | V3 | .000 | .000 | .000 | |
| 1.55. | .800 | A3 | .017 | V1 | 1.224 | V2 | 1.224 | V3 | .000 | .000 | .000 | |
| 1.56. | .121 | A3 | .017 | V1 | 1.221 | V2 | 1.221 | V3 | .000 | .000 | .000 | |
| 1.57. | .441 | A3 | .017 | V1 | 1.217 | V2 | 1.217 | V3 | .000 | .000 | .000 | |
| 1.58. | .763 | A3 | .017 | V1 | 1.216 | V2 | 1.216 | V3 | .000 | .000 | .000 | |
| 1.59. | .084 | A3 | .017 | V1 | 1.213 | V2 | 1.213 | V3 | .000 | .000 | .000 | |
| 1.60. | .405 | A3 | .017 | V1 | 1.209 | V2 | 1.209 | V3 | .000 | .000 | .000 | |
| 1.61. | .726 | A3 | .017 | V1 | 1.206 | V2 | 1.206 | V3 | .000 | .000 | .000 | |
| 1.62. | .047 | A3 | .017 | V1 | 1.202 | V2 | 1.202 | V3 | .000 | .000 | .000 | |
| 1.63. | .368 | A3 | .017 | V1 | 1.198 | V2 | 1.198 | V3 | .000 | .000 | .000 | |
| 1.64. | .689 | A3 | .017 | V1 | 1.194 | V2 | 1.194 | V3 | .000 | .000 | .000 | |
| 1.65. | .010 | A3 | .017 | V1 | 1.189 | V2 | 1.189 | V3 | .000 | .000 | .000 | |
| 1.66. | .331 | A3 | .017 | V1 | 1.185 | V2 | 1.185 | V3 | .000 | .000 | .000 | |
| 1.67. | .652 | A3 | .017 | V1 | 1.179 | V2 | 1.179 | V3 | .000 | .000 | .000 | |
| 1.68. | .973 | A3 | .017 | V1 | 1.176 | V2 | 1.176 | V3 | .000 | .000 | .000 | |
| 1.69. | .294 | A3 | .017 | V1 | 1.173 | V2 | 1.173 | V3 | .000 | .000 | .000 | |
| 1.70. | .615 | A3 | .017 | V1 | 1.168 | V2 | 1.168 | V3 | .000 | .000 | .000 | |
| 1.71. | .936 | A3 | .017 | V1 | 1.163 | V2 | 1.163 | V3 | .000 | .000 | .000 | |
| 1.72. | .257 | A3 | .017 | V1 | 1.159 | V2 | 1.159 | V3 | .000 | .000 | .000 | |
| 1.73. | .578 | A3 | .017 | V1 | 1.155 | V2 | 1.155 | V3 | .000 | .000 | .000 | |
| 1.74. | .899 | A3 | .017 | V1 | 1.152 | V2 | 1.152 | V3 | .000 | .000 | .000 | |
| 1.75. | .219 | A3 | .017 | V1 | 1.146 | V2 | 1.146 | V3 | .000 | .000 | .000 | |
| 1.76. | .540 | A3 | .017 | V1 | 1.137 | V2 | 1.137 | V3 | .000 | .000 | .000 | |
| 1.77. | .861 | A3 | .017 | V1 | 1.133 | V2 | 1.133 | V3 | .000 | .000 | .000 | |
| 1.78. | .182 | A3 | .017 | V1 | 1.129 | V2 | 1.129 | V3 | .000 | .000 | .000 | |
| 1.79. | .503 | A3 | .017 | V1 | 1.125 | V2 | 1.125 | V3 | .000 | .000 | .000 | |
| 1.80. | .824 | A3 | .017 | V1 | 1.121 | V2 | 1.121 | V3 | .000 | .000 | .000 | |
| 1.81. | .145 | A3 | .017 | V1 | 1.116 | V2 | 1.116 | V3 | .000 | .000 | .000 | |
| 1.82. | .466 | A3 | .017 | V1 | 1.113 | V2 | 1.113 | V3 | .000 | .000 | .000 | |
| 1.83. | .786 | A3 | .017 | V1 | 1.109 | V2 | 1.109 | V3 | .000 | .000 | .000 | |
| 1.84. | .107 | A3 | .017 | V1 | 1.104 | V2 | 1.104 | V3 | .000 | .000 | .000 | |
| 1.85. | .427 | A3 | .017 | V1 | 1.100 | V2 | 1.100 | V3 | .000 | .000 | .000 | |
| 1.86. | .747 | A3 | .017 | V1 | 1.096 | V2 | 1.096 | V3 | .000 | .000 | .000 | |
| 1.87. | .067 | A3 | .017 | V1 | 1.092 | V2 | 1.092 | V3 | .000 | .000 | .000 | |
| 1.88. | .387 | A3 | .017 | V1 | 1.088 | V2 | 1.088 | V3 | .000 | .000 | .000 | |
| 1.89. | .707 | A3 | .017 | V1 | 1.084 | V2 | 1.084 | V3 | .000 | .000 | .000 | |
| 1.90. | .027 | A3 | .017 | V1 | 1.080 | V2 | 1.080 | V3 | .000 | .000 | .000 | |
| 1.91. | .347 | A3 | .017 | V1 | 1.076 | V2 | 1.076 | V3 | .000 | .000 | .000 | |
| 1.92. | .667 | A3 | .017 | V1 | 1.072 | V2 | 1.072 | V3 | .000 | .000 | .000 | |
| 1.93. | .987 | A3 | .017 | V1 | 1.068 | V2 | 1.068 | V3 | .000 | .000 | .000 | |
| 1.94. | .307 | A3 | .017 | V1 | 1.064 | V2 | 1.064 | V3 | .000 | .000 | .000 | |
| 1.95. | .627 | A3 | .017 | V1 | 1.060 | V2 | 1.060 | V3 | .000 | .000 | .000 | |
| 1.96. | .947 | A3 | .017 | V1 | 1.056 | V2 | 1.056 | V3 | .000 | .000 | .000 | |
| 1.97. | .267 | A3 | .017 | V1 | 1.052 | V2 | 1.052 | V3 | .000 | .000 | .000 | |
| 1.98. | .587 | A3 | .017 | V1 | 1.048 | V2 | 1.048 | V3 | .000 | .000 | .000 | |
| 1.99. | .907 | A3 | .017 | V1 | 1.044 | V2 | 1.044 | V3 | .000 | .000 | .000 | |
| 2.00. | .227 | A3 | .017 | V1 | 1.040 | V2 | 1.040 | V3 | .000 | .000 | .000 | |
| 2.01. | .547 | A3 | .017 | V1 | 1.036 | V2 | 1.036 | V3 | .000 | .000 | .000 | |
| 2.02. | .867 | A3 | .017 | V1 | 1.032 | V2 | 1.032 | V3 | .000 | .000 | .000 | |
| 2.03. | .187 | A3 | .017 | V1 | 1.028 | V2 | 1.028 | V3 | .000 | .000 | .000 | |
| 2.04. | .507 | A3 | .017 | V1 | 1.024 | V2 | 1.024 | V3 | .000 | .000 | .000 | |
| 2.05. | .827 | A3 | .017 | V1 | 1.020 | V2 | 1.020 | V3 | .000 | .000 | .000 | |
| 2.06. | .147 | A3 | .017 | V1 | 1.016 | V2 | 1.016 | V3 | .000 | .000 | .000 | |
| 2.07. | .467 | A3 | .017 | V1 | 1.012 | V2 | 1.012 | V3 | .000 | .000 | .000 | |
| 2.08. | .787 | A3 | .017 | V1 | 1.008 | V2 | 1.008 | V3 | .000 | .000 | .000 | |
| 2.09. | .107 | A3 | .017 | V1 | 1.004 | V2 | 1.004 | V3 | .000 | .000 | .000 | |
| 2.10. | .427 | A3 | .017 | V1 | 1.000 | V2 | 1.000 | V3 | .000 | .000 | .000 | |
| 2.11. | .747 | A3 | .017 | V1 | .996 | V2 | .996 | V3 | .000 | .000 | .000 | |
| 2.12. | .067 | A3 | .017 | V1 | .992 | V2 | .992 | V3 | .000 | .000 | .000 | |
| 2.13. | .387 | A3 | .017 | V1 | .988 | V2 | .988 | V3 | .000 | .000 | .000 | |
| 2.14. | .707 | A3 | .017 | V1 | .984 | V2 | .984 | V3 | .000 | .000 | .000 | |
| 2.15. | .027 | A3 | .017 | V1 | .980 | V2 | .980 | V3 | .000 | .000 | .000 | |
| 2.16. | .347 | A3 | .017 | V1 | .976 | V2 | .976 | V3 | .000 | .000 | .000 | |
| 2.17. | .667 | A3 | .017 | V1 | .972 | V2 | .972 | V3 | .000 | .000 | .000 | |
| 2.18. | .987 | A3 | .017 | V1 | .968 | V2 | .968 | V3 | .000 | .000 | .000 | |
| 2.19. | .307 | A3 | .017 | V1 | .964 | V2 | .964 | V3 | .000 | .000 | .000 | |
| 2.20. | .627 | A3 | .017 | V1 | .960 | V2 | .960 | V3 | .000 | .000 | .000 | |
| 2.21. | .947 | A3 | .017 | V1 | .956 | V2 | .956 | V3 | .000 | .000 | .000 | |
| 2.22. | .267 | A3 | .017 | V1 | .952 | V2 | .952 | V3 | .000 | .000 | .000 | |
| 2.23. | .587 | A3 | .017 | V1 | .948 | V2 | .948 | V3 | .000 | .000 | .000 | |
| 2.24. | .907 | A3 | .017 | V1 | .944 | V2 | .944 | V3 | .000 | .000 | .000 | |
| 2.25. | .227 | A3 | .017 | V1 | .940 | V2 | .940 | V3 | .000 | .000 | .000 | |
| 2.26. | .547 | A3 | .017 | V1 | .936 | V2 | .936 | V3 | .000 | .000 | .000 | |
| 2.27. | .867 | A3 | .017 | V1 | .932 | V2 | .932 | V3 | .000 | .000 | .000 | |
| 2.28. | .187 | A3 | .017 | V1 | .928 | V2 | .928 | V3 | .000 | .000 | .000 | |
| 2.29. | .507 | A3 | .017 | V1 | .924 | V2 | .924 | V3 | .000 | .000 | .000 | |
| 2.30. | .827 | A3 | .017 | V1 | .920 | V2 | .920 | V3 | .000 | .000 | .000 | |
| 2.31. | .147 | A3 | .017 | V1 | .916 | V2 | .916 | V3 | .000 | .000 | .000 | |
| 2.32. | .467 | A3 | .017 | V1 | .912 | V2 | .912 | V3 | .000 | .000 | .000 | |
| 2.33. | .787 | A3 | .017 | V1 | .908 | V2 | .908 | V3 | .000 | .000 | .000 | |
| 2.34. | .107 | A3 | .017 | V1 | .904 | V2 | .904 | V3 | .000 | .000 | .000 | |
| 2.35. | .427 | A3 | .017 | V1 | .900 | V2 | .900 | V3 | .000 | .000 | .000 | |
| 2.36. | .747 | A3 | .017 | V1 | .896 | V2 | .896 | V3 | .000 | .000 | .000 | |
| 2.37. | .067 | A3 | .017 | V1 | .892 | V2 | .892 | V3 | .000 | .000 | .000 | |
| 2.38. | .387 | A3 | .017 | V1 | .888 | V2 | .888 | V3 | .000 | .000 | .000 | |
| 2.39. | .707 | A3 | .017 | V1 | .884 | V2 | .884 | V3 | .000 | .000 | .000 | |
| 2.40. | .027 | A3 | .017 | V1 | .880 | V2 | .880 | V3 | .000 | .000 | .000 | |
| 2.41. | .347 | A3 | .017 | V1 | .876 | V2 | .876 | V3 | .000 | .000 | .000 | |
| 2.42. | .667 | A3 | .017 | V1 | .872 | V2 | .872 | V3 | .000 | .000 | .000 | |
| 2.43. | .987 | A3 | .017 | V1 | .868 | V2 | .868 | V3 | .000 | .000 | .000 | |
| 2.44. | .307 | A3 | .017 | V1 | .864 | V2 | .864 | V3 | .000 | .000 | .000 | |
| 2.45. | .627 | A3 | .017 | V1 | .860 | V2 | .860 | V3 | .000 | .000 | .000 | |
| 2.46. | .947 | A3 | .017 | V1 | .856 | V2 | .856 | V3 | .000 | .000 | .000 | |
| 2.47. | .267 | A3 | .017 | V1 | .852 | V2 | .852 | V3 | .000 | .000 | .000 | |
| 2.48. | .587 | A3 | .017 | V1 | .848 | V2 | .848 | V3 | .000 | .000 | .000 | |
| 2.49. | .907 | A3 | .017 | V1 | .844 | V2 | .844 | V3 | .000 | .000 | .000 | |
| 2.50. | .227 | A3 | .017 | V1 | .840 | V2 | .840 | V3 | .000 | .000 | .000 | |
| 2.51. | .547 | A3 | .017 | V1 | .836 | V2 | .836 | V3 | .000 | .000 | .000 | |
| 2.52. | .867 | A3 | .017 | V1 | .832 | V2 | .832 | V3 | .000 | .000 | .000 | |
| 2.53. | .187 | A3 | .017 | V1 | .828 | V2 | .828 | V3 | .000 | .000 | .000 | |
| 2.54. | .507 | A3 | .017 | V1 | .824 | V2 | .824 | V3 | .000 | .000 | .000 | |
| 2.55. | .827 | A3 | .017 | V1 | .820 | V2 | .820 | V3 | .000 | .000 | .000 | |
| 2.56. | .147 | A3 | .017 | V1 | .816 | V2 | .816 | V3 | .000 | .000 | .000 | |
| 2.57. | .467 | A3 | .017 | V1 | .812 | V2 | .812 | V3 | .000 | .000 | .000 | |
| 2.58. | .787 | A3 | .017 | V1 | .808 | V2 | .808 | V3 | .000 | .000 | .000 | |
| 2.59. | .107 | A3 | .017 | V1 | .804 | V2 | .804 | V3 | .000 | .000 | .000 | |
| 2.60. | .427 | A3 | .017 | V1 | .800 | V2 | .800 | V3 | .000 | .000 | .000 | |
| 2.61. | .747 | A3 | .017 | V1 | .796 | V2 | .796 | V3 | .000 | .000 | .000 | |
| 2.62. | .067 | A3 | .017 | V1 | .792 | V2 | .792 | V3 | .000 | .000 | .000 | |
| 2.63. | .387 | A3 | .017 | V1 | .788 | V2 | .788 | V3 | .000 | .000 | .000 | |
| 2.64. | .707 | A3 | .017 | V1 | .784 | V2 | .784 | V3 | .000 | .000 | | |

DATE OF RUN IS 08/27/76

PACK NUMBER IS 208A

SHADOW PERIOD IS 10

CYCLE IS 1635.

1635.

PAGE 15 16.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V | |
|------|------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|------|
| 032 | 322 | A3 | .001 | V1 | .319 | V2 | .318 | V3 | .317 | V5 | 1.318 | 1.320 | .317 |
| 035 | 322 | A3 | .001 | V1 | .296 | V2 | .296 | V3 | .294 | V5 | 1.296 | 1.297 | .294 |
| 037 | 366 | A3 | .002 | V1 | .280 | V2 | .282 | V3 | .279 | V5 | 1.281 | 1.283 | .279 |
| 040 | 288 | A3 | .002 | V1 | .270 | V2 | .274 | V3 | .269 | V5 | 1.272 | 1.274 | .269 |
| 042 | 610 | A3 | .002 | V1 | .264 | V2 | .268 | V3 | .263 | V5 | 1.266 | 1.268 | .263 |
| 044 | 933 | A3 | .002 | V1 | .259 | V2 | .263 | V3 | .259 | V5 | 1.261 | 1.263 | .259 |
| 047 | 255 | A3 | .002 | V1 | .256 | V2 | .259 | V3 | .255 | V5 | 1.257 | 1.259 | .255 |
| 049 | 577 | A3 | .002 | V1 | .252 | V2 | .255 | V3 | .251 | V5 | 1.253 | 1.255 | .251 |
| 052 | 900 | A3 | .003 | V1 | .249 | V2 | .251 | V3 | .247 | V5 | 1.250 | 1.251 | .247 |
| 054 | 222 | A3 | .003 | V1 | .245 | V2 | .247 | V3 | .244 | V5 | 1.246 | 1.247 | .244 |
| 055 | 545 | A3 | .003 | V1 | .242 | V2 | .244 | V3 | .240 | V5 | 1.242 | 1.243 | .240 |
| 059 | 867 | A3 | .003 | V1 | .238 | V2 | .240 | V3 | .236 | V5 | 1.239 | 1.240 | .236 |
| 101 | 189 | A3 | .003 | V1 | .234 | V2 | .236 | V3 | .233 | V5 | 1.235 | 1.237 | .233 |
| 103 | 511 | A3 | .004 | V1 | .231 | V2 | .233 | V3 | .230 | V5 | 1.232 | 1.233 | .230 |
| 105 | 833 | A3 | .004 | V1 | .228 | V2 | .230 | V3 | .227 | V5 | 1.229 | 1.230 | .227 |
| 108 | 155 | A3 | .004 | V1 | .224 | V2 | .227 | V3 | .224 | V5 | 1.226 | 1.227 | .224 |
| 111 | 477 | A3 | .004 | V1 | .221 | V2 | .224 | V3 | .217 | V5 | 1.223 | 1.224 | .217 |
| 113 | 799 | A3 | .004 | V1 | .218 | V2 | .221 | V3 | .211 | V5 | 1.219 | 1.221 | .211 |
| 115 | 121 | A3 | .004 | V1 | .215 | V2 | .217 | V3 | .214 | V5 | 1.216 | 1.217 | .214 |
| 118 | 443 | A3 | .004 | V1 | .211 | V2 | .214 | V3 | .211 | V5 | 1.213 | 1.214 | .211 |
| 120 | 765 | A3 | .004 | V1 | .207 | V2 | .210 | V3 | .207 | V5 | 1.209 | 1.210 | .207 |
| 123 | 887 | A3 | .004 | V1 | .204 | V2 | .206 | V3 | .203 | V5 | 1.205 | 1.206 | .203 |
| 125 | 409 | A3 | .004 | V1 | .200 | V2 | .202 | V3 | .200 | V5 | 1.201 | 1.203 | .200 |
| 128 | 731 | A3 | .004 | V1 | .195 | V2 | .198 | V3 | .196 | V5 | 1.197 | 1.198 | .195 |
| 130 | 853 | A3 | .004 | V1 | .192 | V2 | .194 | V3 | .191 | V5 | 1.193 | 1.194 | .191 |
| 132 | 375 | A3 | .004 | V1 | .187 | V2 | .189 | V3 | .187 | V5 | 1.188 | 1.189 | .187 |
| 133 | 697 | A3 | .004 | V1 | .183 | V2 | .184 | V3 | .182 | V5 | 1.183 | 1.184 | .182 |
| 137 | 919 | A3 | .004 | V1 | .178 | V2 | .178 | V3 | .177 | V5 | 1.178 | 1.179 | .177 |
| 140 | 341 | A3 | .004 | V1 | .173 | V2 | .172 | V3 | .171 | V5 | 1.174 | 1.174 | .171 |
| 142 | 663 | A3 | .004 | V1 | .168 | V2 | .167 | V3 | .167 | V5 | 1.172 | 1.168 | .166 |
| 144 | 986 | A3 | .004 | V1 | .164 | V2 | .161 | V3 | .162 | V5 | 1.167 | 1.164 | .160 |
| 147 | 308 | A3 | .007 | V1 | .155 | V2 | .153 | V3 | .157 | V5 | 1.156 | 1.153 | .153 |
| 149 | 630 | A3 | .007 | V1 | .157 | V2 | .148 | V3 | .153 | V5 | 1.151 | 1.157 | .145 |
| 152 | 952 | A3 | .008 | V1 | .152 | V2 | .139 | V3 | .147 | V5 | 1.144 | 1.155 | .133 |
| 154 | 274 | A3 | .009 | V1 | .150 | V2 | .126 | V3 | .117 | V4 | 1.134 | 1.152 | .117 |
| 155 | 596 | A3 | .009 | V1 | .144 | V2 | .110 | V3 | .103 | V4 | 1.123 | 1.150 | |

DATE OF RUN IS 09/10/76

PACK NUMBER IS 208A

SHADOW PERIOD IS 12

CYCLE IS

2123.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|-------|--------|--------|---------|----------|----------|----------|----------|--------|--------|-------|--------|-------|
| 1412. | .321 | A3 | .027 V1 | 1.322 V2 | 1.321 V3 | 1.321 V4 | 1.319 V5 | 1.323 | .000 | .000 | 1.321 | 1.319 |
| 1417. | .963 | A3 | .007 V1 | 1.277 V2 | 1.279 V3 | 1.278 V4 | 1.275 V5 | 1.279 | .000 | .000 | 1.278 | 1.275 |
| 1424. | 1.926 | A3 | .000 V1 | 1.251 V2 | 1.256 V3 | 1.255 V4 | 1.251 V5 | 1.254 | .000 | .000 | 1.253 | 1.251 |
| 1431. | 2.889 | A3 | .000 V1 | 1.241 V2 | 1.244 V3 | 1.244 V4 | 1.240 V5 | 1.243 | .000 | .000 | 1.242 | 1.240 |
| 1438. | 3.852 | A3 | .003 V1 | 1.231 V2 | 1.234 V3 | 1.233 V4 | 1.230 V5 | 1.233 | .000 | .000 | 1.232 | 1.230 |
| 1445. | 4.815 | A3 | .004 V1 | 1.221 V2 | 1.224 V3 | 1.224 V4 | 1.221 V5 | 1.224 | .000 | .000 | 1.223 | 1.221 |
| 1453. | 5.778 | A3 | .004 V1 | 1.212 V2 | 1.215 V3 | 1.214 V4 | 1.211 V5 | 1.214 | .000 | .000 | 1.213 | 1.211 |
| 1500. | 6.741 | A3 | .004 V1 | 1.202 V2 | 1.204 V3 | 1.203 V4 | 1.200 V5 | 1.203 | .000 | .000 | 1.202 | 1.200 |
| 1507. | 7.704 | A3 | .004 V1 | 1.190 V2 | 1.190 V3 | 1.190 V4 | 1.187 V5 | 1.191 | .000 | .000 | 1.190 | 1.187 |
| 1514. | 8.667 | A3 | .005 V1 | 1.175 V2 | 1.175 V3 | 1.173 V4 | 1.170 V5 | 1.173 | .000 | .000 | 1.173 | 1.170 |
| 1521. | 9.630 | A3 | .007 V1 | 1.157 V2 | 1.150 V3 | 1.142 V4 | 1.141 V5 | 1.143 | .000 | .000 | 1.147 | 1.141 |
| 1529. | 10.593 | A3 | .011 V1 | 1.144 V2 | 1.105 V3 | 1.091 V4 | 1.096 V5 | 1.094 | .000 | .000 | 1.106 | 1.091 |
| 1536. | 11.556 | A3 | .013 V1 | 1.129 V2 | 1.064 V3 | 1.058 V4 | 1.062 V5 | 1.057 | .000 | .000 | 1.074 | 1.057 |
| 1543. | 12.519 | A3 | .013 V1 | 1.081 V2 | 1.035 V3 | 1.034 V4 | 1.036 V5 | 1.026 | .000 | .000 | 1.042 | 1.026 |
| 1550. | 13.482 | A3 | .021 V1 | 1.034 V2 | .999 V3 | 1.002 V4 | 1.012 V5 | .980 | .000 | .000 | 1.005 | .980 |
| 1557. | 14.445 | A3 | .031 V1 | .983 V2 | .876 V3 | .909 V4 | .955 V5 | .890 | .000 | .000 | .923 | .876 |
| 1605. | 15.408 | A3 | .061 V1 | .899 V2 | .243 V3 | .433 V4 | .746 V5 | .566 | .000 | .000 | .577 | .243 |

ORIGINAL PAGE IS
OF POOR QUALITY

DATE OF RUN IS 09/10/76

PACK NUMBER IS 208A

SHADOW PERIOD IS 13

CYCLE IS 2402.

WQEC/C 77-134
PAGE IS 21.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|-------|------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 1218. | .320 | V1 | 1.324 | V2 | 1.325 | V3 | 1.325 | V4 | 1.322 | V5 | 1.324 | 1.322 |
| 1226. | .280 | V1 | 1.268 | V2 | 1.272 | V3 | 1.270 | V4 | 1.265 | V5 | 1.268 | 1.265 |
| 1233. | .600 | V1 | 1.268 | V2 | 1.264 | V3 | 1.263 | V4 | 1.256 | V5 | 1.260 | 1.256 |
| 1240. | .240 | V1 | 1.247 | V2 | 1.255 | V3 | 1.254 | V4 | 1.246 | V5 | 1.250 | 1.246 |
| 1247. | .210 | V1 | 1.234 | V2 | 1.244 | V3 | 1.243 | V4 | 1.235 | V5 | 1.239 | 1.235 |
| 1254. | .170 | V1 | 1.227 | V2 | 1.234 | V3 | 1.233 | V4 | 1.226 | V5 | 1.230 | 1.226 |
| 1302. | .130 | V1 | 1.218 | V2 | 1.224 | V3 | 1.223 | V4 | 1.217 | V5 | 1.220 | 1.217 |
| 1309. | .090 | V1 | 1.208 | V2 | 1.214 | V3 | 1.213 | V4 | 1.207 | V5 | 1.210 | 1.207 |
| 1316. | .060 | V1 | 1.197 | V2 | 1.202 | V3 | 1.202 | V4 | 1.195 | V5 | 1.198 | 1.195 |
| 1323. | .020 | V1 | 1.184 | V2 | 1.187 | V3 | 1.187 | V4 | 1.179 | V5 | 1.182 | 1.179 |
| 1330. | .980 | V1 | 1.167 | V2 | 1.168 | V3 | 1.167 | V4 | 1.151 | V5 | 1.154 | 1.151 |
| 1337. | .840 | V1 | 1.150 | V2 | 1.142 | V3 | 1.129 | V4 | 1.087 | V5 | 1.088 | 1.087 |
| 1344. | .800 | V1 | 1.064 | V2 | 1.036 | V3 | 1.034 | V4 | 1.027 | V5 | 1.025 | 1.025 |
| 1351. | .760 | V1 | 1.015 | V2 | .996 | V3 | .995 | V4 | 1.000 | V5 | .991 | .991 |
| 1408. | .720 | V1 | .970 | V2 | .884 | V3 | .889 | V4 | .961 | V5 | .913 | .884 |
| 1415. | | V1 | .873 | V2 | .204 | V3 | .319 | V4 | .750 | V5 | .556 | .204 |

DATE OF RUN IS 09/10/76

PACK NUMBER IS 208A

SHADOW PERIOD IS 14

CYCLE IS

2584.

WQEC/C 77-134
PAGE 15 22.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HTGH-V | LOW-V | | | | | |
|-------|------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|------|------|-------|-------|-------|
| 1018. | .322 | V1 | .324 | V2 | .319 | V3 | .297 | V4 | .319 | V5 | .323 | .000 | .000 | .000 | 1.316 | 1.323 | 1.297 |
| 1022. | .967 | V1 | .274 | V2 | .276 | V3 | .271 | V4 | .273 | V5 | .278 | .000 | .000 | .000 | 1.275 | 1.278 | 1.271 |
| 1032. | .255 | V1 | .242 | V2 | .247 | V3 | .250 | V4 | .243 | V5 | .247 | .000 | .000 | .000 | 1.246 | 1.250 | 1.243 |
| 1042. | .543 | V1 | .231 | V2 | .233 | V3 | .236 | V4 | .229 | V5 | .233 | .000 | .000 | .000 | 1.232 | 1.236 | 1.229 |
| 1051. | .831 | V1 | .225 | V2 | .220 | V3 | .215 | V4 | .217 | V5 | .221 | .000 | .000 | .000 | 1.221 | 1.225 | 1.217 |
| 1101. | .119 | V1 | .209 | V2 | .206 | V3 | .202 | V4 | .204 | V5 | .208 | .000 | .000 | .000 | 1.208 | 1.212 | 1.204 |
| 1110. | .407 | V1 | .199 | V2 | .195 | V3 | .197 | V4 | .189 | V5 | .193 | .000 | .000 | .000 | 1.192 | 1.197 | 1.189 |
| 1120. | .697 | V1 | .174 | V2 | .167 | V3 | .164 | V4 | .166 | V5 | .169 | .000 | .000 | .000 | 1.171 | 1.178 | 1.166 |
| 1130. | .986 | V1 | .153 | V2 | .150 | V3 | .146 | V4 | .120 | V5 | .108 | .000 | .000 | .000 | 1.131 | 1.151 | 1.108 |
| 1139. | .275 | V1 | .139 | V2 | .128 | V3 | .122 | V4 | .061 | V5 | .057 | .000 | .000 | .000 | 1.080 | 1.130 | 1.057 |
| 1149. | .566 | V1 | .115 | V2 | .106 | V3 | .102 | V4 | .024 | V5 | .022 | .000 | .000 | .000 | 1.035 | 1.069 | 1.022 |
| 1158. | .854 | V1 | .093 | V2 | .069 | V3 | .082 | V4 | .969 | V5 | .950 | .000 | .000 | .000 | .973 | 1.015 | .949 |
| 1208. | .142 | V1 | .033 | V2 | .371 | V3 | .358 | V4 | .479 | V5 | .479 | .000 | .000 | .000 | .524 | .935 | .358 |

ORIGINAL PAGE IS
OF POOR QUALITY

| PACK | DAY | AVE-CELL
V END DIS | AUX
ELECT | PRESS
END DIS | PRESS
END TRIP | AUX
ELEC | AVE-CELL
V END T | AVE-CELL
V END C | AHO | AHI | AHI-TRIP |
|------|-----------|-----------------------|--------------|------------------|-------------------|-------------|---------------------|---------------------|---------|---------|----------|
| 8 | 730.0000 | 1.2620 | 0840 | 5.4230 | 36.0000 | 430 | 4100 | 5112 | 1.4240 | 8.4300 | 3.6000 |
| 8 | 732.0000 | 1.2368 | 0410 | 7.2310 | 115.0000 | 480 | 4120 | 5168 | 2.3400 | 7.4600 | 2.6000 |
| 8 | 734.0000 | 1.2308 | 0330 | 7.2310 | 11.0000 | 520 | 4150 | 5156 | 3.3400 | 9.7300 | 4.9000 |
| 8 | 736.0000 | 1.2188 | 0270 | 7.4570 | 9.2000 | 530 | 4000 | 4586 | 4.3820 | 9.0900 | 4.2000 |
| 8 | 738.0000 | 1.2004 | 0260 | 7.2310 | 9.7000 | 470 | 4100 | 5062 | 5.4590 | 10.5000 | 5.7000 |
| 8 | 740.0000 | 1.1922 | 0280 | 7.0050 | 9.2000 | 480 | 3980 | 4508 | 6.4590 | 11.7000 | 6.9000 |
| 8 | 741.0000 | 1.1912 | 0270 | 8.3610 | 8.7000 | 520 | 3970 | 4486 | 7.4790 | 11.6000 | 6.8000 |
| 8 | 742.0000 | 1.1888 | 0260 | 7.4570 | 10.2000 | 550 | 3950 | 4470 | 8.4590 | 11.6400 | 6.8000 |
| 8 | 743.0000 | 1.1842 | 0210 | 7.2310 | 9.6000 | 560 | 4100 | 4864 | 9.4590 | 11.8000 | 7.0000 |
| 8 | 745.0000 | 1.1810 | 0200 | 7.2310 | 9.6000 | 520 | 4200 | 5032 | 10.4590 | 11.9900 | 7.2000 |
| 8 | 746.0000 | 1.1770 | 0250 | 7.2310 | 9.6000 | 510 | 4150 | 5066 | 11.4590 | 12.5000 | 7.7000 |
| 8 | 747.0000 | 1.1698 | 0260 | 7.4570 | 9.8000 | 550 | 4110 | 4980 | 12.4590 | 12.9000 | 8.1000 |
| 8 | 748.0000 | 1.1698 | 0270 | 7.4570 | 9.8000 | 570 | 4210 | 5264 | 13.4590 | 13.7000 | 8.9000 |
| 8 | 749.0000 | 1.1720 | 0210 | 7.4570 | 9.8000 | 580 | 4200 | 4906 | 14.4590 | 14.2000 | 9.4000 |
| 8 | 751.0000 | 1.1914 | 0220 | 7.6830 | 10.0000 | 550 | 4170 | 5072 | 15.4590 | 13.7700 | 8.9000 |
| 8 | 752.0000 | 1.1876 | 0230 | 7.4570 | 9.6000 | 600 | 4120 | 4896 | 16.4590 | 13.5600 | 8.7000 |
| 8 | 753.0000 | 1.1834 | 0210 | 7.6830 | 9.4000 | 590 | 4230 | 5116 | 17.4590 | 13.5400 | 8.7000 |
| 8 | 754.0000 | 1.1856 | 0220 | 7.4570 | 9.8000 | 600 | 4120 | 4740 | 18.4590 | 13.5400 | 8.7000 |
| 8 | 755.0000 | 1.1874 | 0220 | 7.4570 | 9.5000 | 610 | 4170 | 4898 | 19.4590 | 13.5400 | 8.7000 |
| 8 | 756.0000 | 1.1934 | 0210 | 7.6830 | 9.6000 | 620 | 4250 | 5202 | 20.4590 | 13.5400 | 8.7000 |
| 8 | 757.0000 | 1.1674 | 0240 | 7.2310 | 9.2000 | 640 | 4110 | 4838 | 21.4590 | 13.5400 | 8.7000 |
| 8 | 759.0000 | 1.2042 | 0270 | 7.6830 | 9.2000 | 650 | 4220 | 5156 | 22.4590 | 13.5400 | 8.7000 |
| 8 | 761.0000 | 1.2106 | 0250 | 7.2310 | 9.0000 | 620 | 4200 | 4714 | 23.4590 | 13.5400 | 8.7000 |
| 8 | 763.0000 | 1.2190 | 0240 | 7.6830 | 9.3000 | 600 | 4250 | 5010 | 24.4590 | 13.5400 | 8.7000 |
| 8 | 765.0000 | 1.2260 | 0210 | 7.4570 | 9.7000 | 550 | 4210 | 5046 | 25.4590 | 13.5400 | 8.7000 |
| 8 | 767.0000 | 1.2388 | 0190 | 7.4570 | 9.7000 | 510 | 4100 | 4728 | 26.4590 | 13.5400 | 8.7000 |
| 8 | 769.0000 | 1.2446 | 0180 | 7.4570 | 9.7000 | 480 | 4290 | 5194 | 27.4590 | 13.5400 | 8.7000 |
| 8 | 771.0000 | 1.2672 | 0170 | 7.4570 | 9.6000 | 450 | 4250 | 5012 | 28.4590 | 13.5400 | 8.7000 |
| 8 | 912.0000 | 1.2454 | 0720 | 11.7510 | 4.2200 | 420 | 4020 | 4588 | 29.4590 | 13.5400 | 8.7000 |
| 8 | 914.0000 | 1.2286 | 0290 | 31.1530 | 4.2200 | 370 | 4130 | 4622 | 30.4590 | 13.5400 | 8.7000 |
| 8 | 916.0000 | 1.2162 | 0330 | 23.0850 | 4.2200 | 430 | 4110 | 4622 | 31.4590 | 13.5400 | 8.7000 |
| 8 | 918.0000 | 1.2022 | 0310 | 23.0510 | 4.2200 | 470 | 4150 | 4646 | 32.4590 | 13.5400 | 8.7000 |
| 8 | 920.0000 | 1.1904 | 0300 | 23.3390 | 4.2200 | 420 | 4180 | 4626 | 33.4590 | 13.5400 | 8.7000 |
| 8 | 922.0000 | 1.1842 | 0270 | 18.7570 | 4.2200 | 410 | 4160 | 4664 | 34.4590 | 13.5400 | 8.7000 |
| 8 | 924.0000 | 1.1774 | 0220 | 9.9490 | 4.2200 | 450 | 4200 | 4734 | 35.4590 | 13.5400 | 8.7000 |
| 8 | 925.0000 | 1.1734 | 0220 | 9.2710 | 4.2200 | 470 | 4120 | 5030 | 36.4590 | 13.5400 | 8.7000 |
| 8 | 926.0000 | 1.1710 | 0250 | 15.8190 | 4.2200 | 520 | 4070 | 4904 | 37.4590 | 13.5400 | 8.7000 |
| 8 | 927.0000 | 1.1676 | 0230 | 15.1410 | 4.2200 | 570 | 4160 | 4842 | 38.4590 | 13.5400 | 8.7000 |
| 8 | 928.0000 | 1.1630 | 0210 | 14.6890 | 4.2200 | 590 | 4180 | 4930 | 39.4590 | 13.5400 | 8.7000 |
| 8 | 929.0000 | 1.1612 | 0270 | 14.2370 | 4.2200 | 520 | 4160 | 4950 | 40.4590 | 13.5400 | 8.7000 |
| 8 | 930.0000 | 1.1648 | 0280 | 13.7850 | 4.2200 | 550 | 4250 | 5140 | 41.4590 | 13.5400 | 8.7000 |
| 8 | 931.0000 | 1.1666 | 0210 | 11.7510 | 4.2200 | 500 | 4270 | 5198 | 42.4590 | 13.5400 | 8.7000 |
| 8 | 933.0000 | 1.1824 | 0230 | 11.7510 | 4.2200 | 470 | 4100 | 4850 | 43.4590 | 13.5400 | 8.7000 |
| 8 | 934.0000 | 1.1818 | 0260 | 11.5250 | 4.2200 | 450 | 4120 | 4964 | 44.4590 | 13.5400 | 8.7000 |
| 8 | 935.0000 | 1.1794 | 0250 | 9.9430 | 4.2200 | 470 | 4150 | 5004 | 45.4590 | 13.5400 | 8.7000 |
| 8 | 936.0000 | 1.1882 | 0280 | 10.8470 | 4.2200 | 500 | 4130 | 4990 | 46.4590 | 13.5400 | 8.7000 |
| 8 | 937.0000 | 1.2020 | 0270 | 10.3950 | 4.2200 | 550 | 4160 | 5098 | 47.4590 | 13.5400 | 8.7000 |
| 8 | 938.0000 | 1.2018 | 0250 | 10.3950 | 4.2200 | 510 | 4100 | 4774 | 48.4590 | 13.5400 | 8.7000 |
| 8 | 939.0000 | 1.2026 | 0360 | 10.1690 | 4.2200 | 470 | 4170 | 5082 | 49.4590 | 13.5400 | 8.7000 |
| 8 | 941.0000 | 1.2078 | 0250 | 9.4910 | 4.2200 | 450 | 4190 | 5190 | 50.4590 | 13.5400 | 8.7000 |
| 8 | 943.0000 | 1.2152 | 0330 | 9.7170 | 4.2200 | 420 | 4150 | 5106 | 51.4590 | 13.5400 | 8.7000 |
| 8 | 945.0000 | 1.2258 | 0280 | 9.2650 | 4.2200 | 350 | 4300 | 4950 | 52.4590 | 13.5400 | 8.7000 |
| 8 | 947.0000 | 1.2378 | 0210 | 9.4910 | 4.2200 | 370 | 4170 | 4902 | 53.4590 | 13.5400 | 8.7000 |
| 8 | 949.0000 | 1.2492 | 0220 | 9.4910 | 4.2200 | 370 | 4150 | 4892 | 54.4590 | 13.5400 | 8.7000 |
| 8 | 951.0000 | 1.2636 | 0200 | 7.0050 | 4.2200 | 310 | 4150 | 4870 | 55.4590 | 13.5400 | 8.7000 |
| 8 | 953.0000 | 1.2468 | 0650 | 7.9090 | 4.2200 | 310 | 4120 | 4778 | 56.4590 | 13.5400 | 8.7000 |
| 8 | 955.0000 | 1.2480 | 0240 | 8.1350 | 4.2200 | 420 | 4100 | 4662 | 57.4590 | 13.5400 | 8.7000 |
| 8 | 957.0000 | 1.2198 | 0210 | 7.9090 | 4.2200 | 570 | 4200 | 5094 | 58.4590 | 13.5400 | 8.7000 |
| 8 | 959.0000 | 1.2100 | 0170 | 7.9090 | 4.2200 | 310 | 4110 | 4756 | 59.4590 | 13.5400 | 8.7000 |
| 8 | 1002.0000 | 1.2042 | 0210 | 8.1350 | 4.2200 | 520 | 4200 | 5034 | 60.4590 | 13.5400 | 8.7000 |
| 8 | 1104.0000 | 1.1884 | 0300 | 8.3610 | 4.2200 | 410 | 4230 | 5110 | 61.4590 | 13.5400 | 8.7000 |
| 8 | 1106.0000 | 1.1824 | 0310 | 8.1350 | 4.2200 | 470 | 4120 | 4758 | 62.4590 | 13.5400 | 8.7000 |
| 8 | 1107.0000 | 1.1794 | 0250 | 7.6830 | 4.2200 | 450 | 4170 | 4974 | 63.4590 | 13.5400 | 8.7000 |
| 8 | 1108.0000 | 1.1782 | 0210 | 7.9090 | 4.2200 | 410 | 4150 | 4688 | 64.4590 | 13.5400 | 8.7000 |
| 8 | 1109.0000 | 1.1716 | 0290 | 8.1350 | 4.2200 | 360 | 4110 | 4722 | 65.4590 | 13.5400 | 8.7000 |
| 8 | 1110.0000 | 1.1674 | 0310 | 8.3610 | 4.2200 | 400 | 4150 | 4992 | 66.4590 | 13.5400 | 8.7000 |
| 8 | 1111.0000 | 1.1680 | 0160 | 8.1350 | 4.2200 | 370 | 4130 | 4946 | 67.4590 | 13.5400 | 8.7000 |
| 8 | 1112.0000 | 1.1670 | 0170 | 7.9090 | 4.2200 | 420 | 4100 | 4720 | 68.4590 | 13.5400 | 8.7000 |
| 8 | 1113.0000 | 1.1670 | 0220 | 7.9090 | 4.2200 | 410 | 4110 | 4720 | 69.4590 | 13.5400 | 8.7000 |
| 8 | 1115.0000 | 1.1926 | 0250 | 8.1350 | 4.2200 | 400 | 4120 | 4812 | 70.4590 | 13.5400 | 8.7000 |
| 8 | 1116.0000 | 1.1894 | 0270 | 7.9090 | 4.2200 | 370 | 4150 | 5094 | 71.4590 | 13.5400 | 8.7000 |
| 8 | 1117.0000 | 1.1862 | 0210 | 7.9090 | 4.2200 | 420 | 4150 | 4968 | 72.4590 | 13.5400 | 8.7000 |
| 8 | 1118.0000 | 1.1848 | 0200 | 7.9090 | 4.2200 | 370 | 4140 | 4896 | 73.4590 | 13.5400 | 8.7000 |
| 8 | 1119.0000 | 1.1860 | 0250 | 7.6830 | 4.2200 | 310 | 4160 | 5060 | 74.4590 | 13.5400 | 8.7000 |
| 8 | 1120.0000 | 1.1924 | 0210 | 7.6830 | 4.2200 | 400 | 4140 | 4728 | 75.4590 | 13.5400 | 8.7000 |
| 8 | 1121.0000 | 1.1956 | 0180 | 7.4570 | 4.2200 | 370 | 4130 | 4936 | 76.4590 | 13.5400 | 8.7000 |
| 8 | 1123.0000 | 1.2000 | 0250 | 7.6830 | 4.2200 | 310 | 4200 | 5142 | 77.4590 | 13.5400 | 8.7000 |
| 8 | 1125.0000 | 1.2066 | 0270 | 7.6830 | 4.2200 | 210 | 4150 | 4934 | 78.4590 | 13.5400 | 8.7000 |
| 8 | 1127.0000 | 1.2138 | 0220 | 7.4570 | 4.2200 | 220 | 4230 | 5232 | 79.4590 | 13.5400 | 8.7000 |

195

[illegible]

208 2414.0000
208 2415.0000
208 2416.0000
208 2417.0000
208 2420.0000
208 2421.0000

1.1890
1.1932
1.1958
1.1916
1.2088
1.2166

.0020
.0070
.0070
.0020
.0010
.0040

10.8470
10.8470
10.6210
10.3950
10.1690
10.1690

11.5250
11.2990
11.0730
11.0730
10.6210
10.8470

.2150
.1970
.1620
.2010
.1730
.2570

1.6952
1.6846
1.6394
1.6828
1.6722
1.7278

1.2672
1.5696
1.5732
1.5758
1.5904
1.5906

1.3200
7.0800
6.7500
6.4500
4.8300
4.1800

10.3500
10.1900
10.3200
10.3300
7.4300
6.7000

7.6700
7.1400
6.7700
6.8300
5.2000
4.5900

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| PAI | DAY | AVE-CELL
V END DIS | AUX
ELECT | PRESS
FND DIS | PRESS
END TRIP | AUX
ELEC | AVE-CELL
V END T | AVE-CELL
V END C | AHU | AHI | AHI-TRIP |
|-----|------|-----------------------|--------------|------------------|-------------------|-------------|---------------------|---------------------|--------|---------|----------|
| 208 | 2564 | 0.0000 | 1.2080 | 0.0800 | 4.9710 | 0.3270 | 1.6732 | 1.5050 | 2.1100 | 8.0300 | 2.1520 |
| 208 | 2565 | 0.0000 | 1.1990 | 0.0900 | 9.4910 | 0.0390 | 1.6998 | 1.5256 | 3.2200 | 8.3000 | 3.2570 |
| 208 | 2566 | 0.0000 | 1.1868 | 0.0900 | 9.4910 | 9.7170 | 1.6960 | 1.5286 | 4.8300 | 8.6700 | 4.8400 |
| 208 | 2567 | 0.0000 | 1.1814 | 0.0800 | 9.4910 | 9.4910 | 1.6468 | 1.5366 | 5.4800 | 9.1600 | 5.4450 |
| 208 | 2568 | 0.0000 | 1.1762 | 0.0800 | 9.4910 | 9.4910 | 1.6074 | 1.5478 | 6.1700 | 9.8000 | 6.0500 |
| 208 | 2569 | 0.0000 | 1.1730 | 0.0300 | 9.4910 | 9.9430 | 1.6866 | 1.5592 | 6.7700 | 10.4500 | 6.7760 |
| 208 | 2570 | 0.0000 | 1.1704 | 0.0050 | 9.4910 | 10.3950 | 1.6194 | 1.5606 | 7.0600 | 10.6400 | 7.0220 |
| 208 | 2571 | 0.0000 | 1.1682 | 0.0300 | 9.4910 | 11.0730 | 1.6552 | 1.5616 | 7.4100 | 11.0000 | 7.3850 |
| 208 | 2572 | 0.0000 | 1.1632 | 0.0120 | 11.7510 | 11.5250 | 1.6026 | 1.5836 | 8.0500 | 11.5200 | 7.9720 |
| 208 | 2573 | 0.0000 | 1.1622 | 0.0100 | 11.7510 | 12.4290 | 1.6198 | 1.5742 | 8.3700 | 11.8000 | 8.3450 |
| 208 | 2574 | 0.0000 | 1.1572 | 0.0110 | 9.4910 | 10.6210 | 1.5926 | 1.5616 | 8.6900 | 12.2200 | 8.7090 |
| 208 | 2575 | 0.0000 | 1.1564 | 0.0800 | 9.4910 | 9.9430 | 1.6836 | 1.5612 | 8.7800 | 12.4000 | 8.8300 |
| 208 | 2576 | 0.0000 | 1.1516 | 0.0100 | 7.2310 | 9.4910 | 1.6260 | 1.5630 | 9.0100 | 12.6000 | 9.1000 |
| 208 | 2577 | 0.0000 | 1.1478 | 0.0400 | 7.2310 | 9.3610 | 1.6088 | 1.5700 | 9.3400 | 12.8700 | 9.4330 |
| 208 | 2578 | 0.0000 | 1.1494 | 0.0900 | 7.2310 | 8.1350 | 1.6498 | 1.5720 | 9.3400 | 13.0000 | 9.5000 |
| 208 | 2579 | 0.0000 | 1.1420 | 0.0900 | 7.2310 | 7.6830 | 1.6780 | 1.5738 | 9.6600 | 13.1000 | 9.6770 |
| 208 | 2580 | 0.0000 | 1.1708 | 0.0180 | 7.2310 | 7.6830 | 1.6228 | 1.5316 | 9.6600 | 13.0700 | 9.6760 |
| 208 | 2581 | 0.0000 | 1.1684 | 0.0500 | 7.2310 | 7.6830 | 1.6328 | 1.5218 | 9.6600 | 13.0900 | 9.6750 |
| 208 | 2582 | 0.0000 | 1.1744 | 0.0700 | 7.2310 | 7.6830 | 1.6590 | 1.5240 | 9.3400 | 12.8600 | 9.4360 |
| 208 | 2583 | 0.0000 | 1.1732 | 0.0800 | 7.2310 | 7.4570 | 1.6614 | 1.5428 | 9.0100 | 12.3900 | 9.0770 |
| 208 | 2584 | 0.0000 | 1.1716 | 0.0800 | 7.2310 | 7.2310 | 1.6666 | 1.5488 | 9.0200 | 12.1900 | 8.9800 |
| 208 | 2585 | 0.0000 | 1.1754 | 0.0800 | 7.2310 | 7.2310 | 1.6444 | 1.5618 | 8.6900 | 11.9300 | 8.6670 |
| 208 | 2586 | 0.0000 | 1.1794 | 0.0600 | 7.2310 | 7.2310 | 1.6984 | 1.5566 | 8.3800 | 11.6900 | 8.4210 |
| 208 | 2587 | 0.0000 | 1.1832 | 0.0700 | 7.2310 | 7.2310 | 1.6694 | 1.5598 | 8.0700 | 11.6400 | 8.0610 |
| 208 | 2588 | 0.0000 | 1.1898 | 0.0600 | 7.2310 | 7.2310 | 1.7046 | 1.5640 | 7.4100 | 10.7200 | 7.4620 |
| 208 | 2589 | 0.0000 | 1.1792 | 0.0000 | 6.7790 | 7.4570 | 1.6802 | 1.5640 | 6.4500 | 9.8700 | 6.8600 |
| 208 | 2590 | 0.0000 | 1.2020 | 0.0100 | 9.2650 | 9.9430 | 1.6610 | 1.5726 | 6.1200 | 9.4700 | 6.1000 |
| 208 | 2591 | 0.0000 | 1.2142 | 0.0200 | 9.0390 | 9.4910 | 1.6550 | 1.5710 | 4.4000 | 7.7500 | 4.4300 |
| 208 | 2592 | 0.0000 | 1.2300 | 0.0600 | 8.5870 | 8.5870 | 1.6526 | 1.5760 | 3.2200 | 5.8500 | 3.2400 |
| 208 | 2593 | 0.0000 | 1.2464 | 0.0600 | 8.3610 | 8.8130 | 1.6782 | 1.5370 | 1.9300 | 5.8000 | 2.0400 |

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3. Pack 209A, 5-cells

a. Cell information: (Same as Pack 207A, Section V. C. 1.)

b. Parameters:

| | | | |
|--------------------------|-----|------------------------------|-----|
| Depth of Discharge (%) | 60 | Float/Trickle Current (amps) | .20 |
| Charge Control | AE | Auxiliary Electrode:* | |
| Charge Current (amps) | 3.0 | Resistance (ohms) | 300 |
| Discharge Current (amps) | 6.0 | Trip Voltage (mv) | 300 |
| Temperature (°C) | 20 | | |

*--Cells 3, 4 and 5.

c. Capacity checks: (Discharge to .50 volts any cell).

| | Cell
1 | Cell
2 | Cell
3 | Cell
4 | Cell
5 | ah
out |
|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Shadow 5 (Figure 82) | 1.010 | .960 | .961 | 1.001 | .345 | 15.04 |
| Shadow 6 (Figure 83) | .995 | .937 | .934 | .986 | .357 | 14.64 |
| Shadow 7 (Figure 84) | .991 | .947 | .918 | .977 | .451 | 14.40 |
| Shadow 8 (Figure 85) | .970 | .930 | .882 | .953 | .402 | 14.45 |
| Shadow 9 (Figure 86) | .958 | .838 | .141 | .910 | .200 | 13.84 |
| Shadow 10 (Figure 87) | 1.027 | 1.025 | 1.008 | .995 | -.085 | 12.77 |
| Shadow 11 | 1.006 | .999 | .906 | .907 | -.178 | 12.77 |
| Shadow 12 (Figure 88) | .789 | .990 | .984 | .281 | .153 | 12.64 |
| Shadow 13 (Figure 89) | 1.005 | .991 | .874 | .358 | .391 | 11.93 |
| Shadow 14 (Figure 90) | .945 | .980 | .974 | .047 | .868 | 11.67 |

d. Test results during Eclipse Seasons: (Figures 91 to 98).

(1) Average End of Discharge Voltages: The reconditioning effect, due to the capacity checks, can be seen for each period. The average voltage increased by 40 millivolts the day following the capacity check during period 14.

(2) Average Cell Voltages at Trip and End of Charge: The end of charge voltages were always higher than the trip voltages for the first 7 periods. This was reversed for the next 6 periods as the trip voltages were higher. Then during period 14 the trip voltages were only higher at the beginning and at the end of the period. As indicative of the previous packs of this group, higher trip voltages at the beginning of each period appears to be due to the auxiliary electrodes becoming "desensitized" during the preceding sun period. This condition lasted 4 days during the last period (14) before the electrodes regained their sensitivity.

(3) The end of charge pressures, at the beginning of periods 5 through 8, were 100 psia or higher. They began to decrease as the auxiliary electrodes regained their sensitivity. During periods 9 through 14, the pressures have remained constant throughout the periods even though the trip voltages have gotten very high at the beginning of each period.

(4) Ampere-Hours In at Trip: During the middle portion of the last shadow period, the ampere-hours in at trip, were less than the ampere-hours out during the preceding discharge. Previously, the ampere-hours in at trip were always greater during the middle portion of the shadow periods.

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e. Performance during Sun Periods: The pack began test with a shadow period and has now completed 14 sun periods. The pressures, cell 1, have not exceeded 15 psia during any period. Beginning with period 8, various cells have exhibited high voltages at the start of the sun periods. Following is a listing of the high, average and low cell voltages at the start and end of sun periods 5 through 14.

Sun Periods

| Voltages** | 5 | | 6 | | 7 | | 8 | |
|------------|------------|----------|----------|----------|----------|----------|------------|----------|
| | Start | End | Start | End | Start | End | Start | End |
| High | 1.417(4,5) | 1.405(2) | 1.407(5) | 1.402(2) | 1.407(5) | 1.404(2) | 1.460(3,4) | 1.398(2) |
| Average | 1.415 | 1.402 | 1.404 | 1.400 | 1.403 | 1.399 | 1.436 | 1.394 |
| Low | 1.411(2) | 1.399(4) | 1.400(1) | 1.396(5) | 1.400(3) | 1.390(5) | 1.413(1) | 1.382(5) |
| Voltages | 9 | | 10 | | 11 | | 12 | |
| | Start | End | Start | End | Start | End | Start | End |
| High | 1.455(2) | 1.416(5) | 1.485(4) | 1.377(5) | 1.518(5) | 1.391(1) | 1.528(3) | 1.386(1) |
| Average | 1.424 | 1.405 | 1.436 | 1.367 | 1.471 | 1.381 | 1.442 | 1.369 |
| Low | 1.404(4) | 1.395(1) | 1.409(5) | 1.346(2) | 1.434(4) | 1.368(4) | 1.397(1) | 1.358(4) |
| Voltages | 13 | | 14 | | | | | |
| | Start | End | Start | End | | | | |
| High | 1.481(3) | 1.401(1) | 1.453(2) | 1.401(1) | | | | |
| Average | 1.413 | 1.370 | 1.424 | 1.391 | | | | |
| Low | 1.380(4) | 1.353(4) | 1.397(1) | 1.380(4) | | | | |

**--() Indicates which cell.

KEY
 * HIGH CELL
 * LOW CELL
 * AVERAGE

PACK NUMBER IS 209A
 SHADOW PERIOD IS 5
 CYCLE NUMBER IS 750
 DISCHARGE RATE IS 6.0

AMPERE HOUR OUT

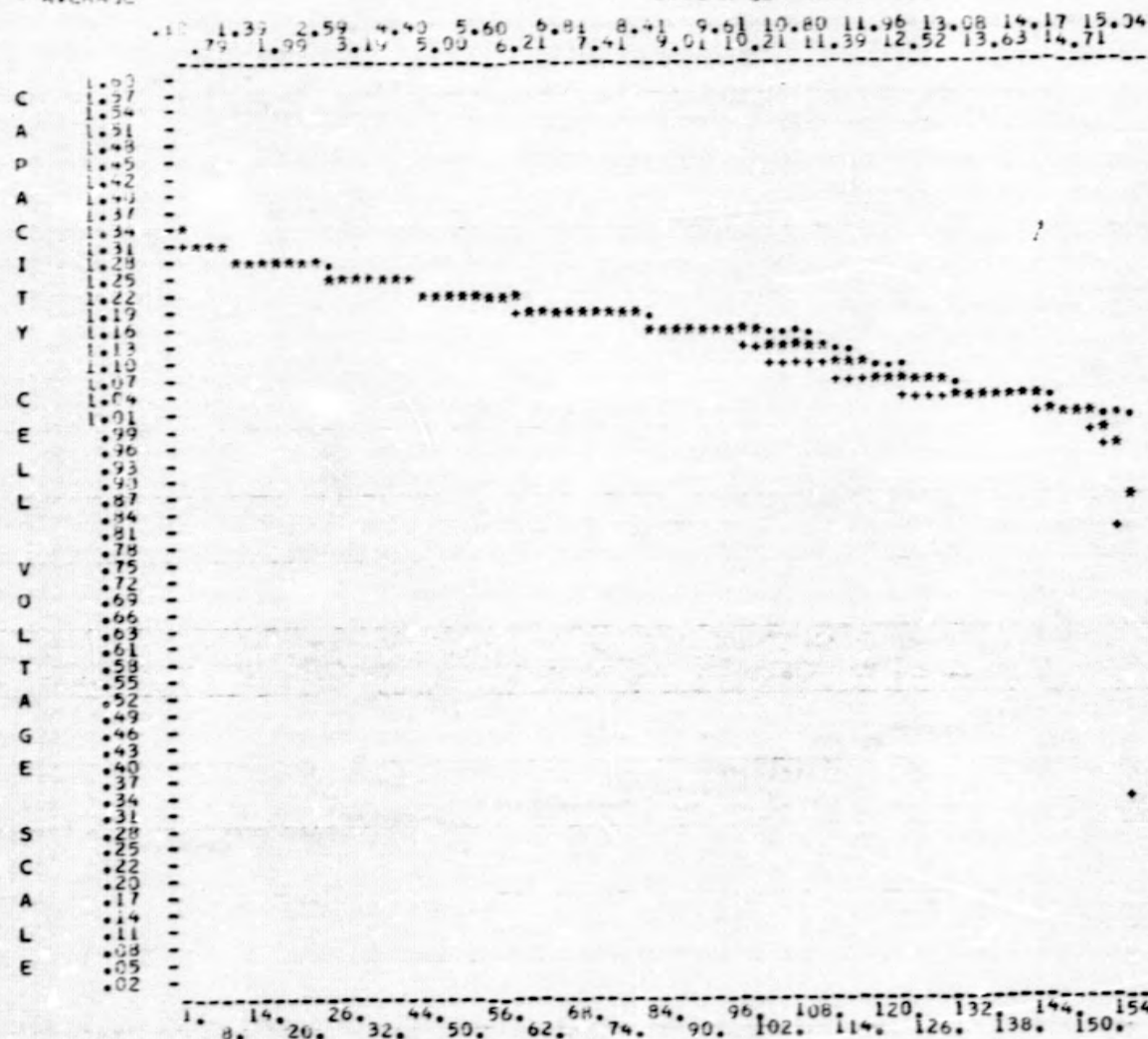


FIGURE 82

KEY
 • HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 209A
 SHADOW PERIOD IS 6
 CYCLE NUMBER IS 932
 DISCHARGE RATE IS 6.0

AMPERE HOUR OUT

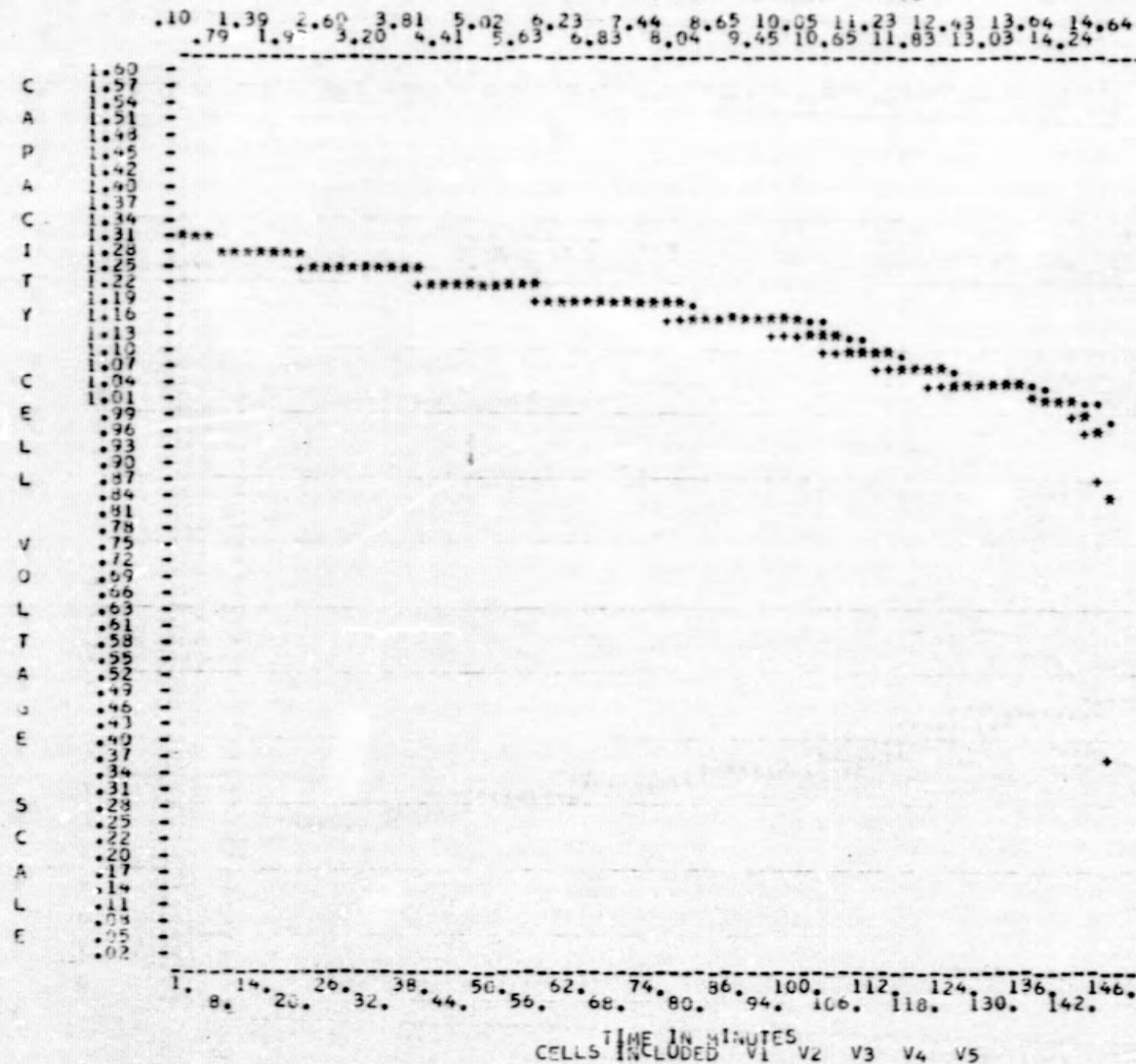


FIGURE 83

KEY
 * HIGH CELL
 + LOW CELL
 * AVERAGE

CHARGE NUMBER IS 209A
 DISCHARGE PERIOD IS 7
 CHARGE NUMBER IS 1114
 DISCHARGE RATE IS 6.

AMPERE HOUR OUT

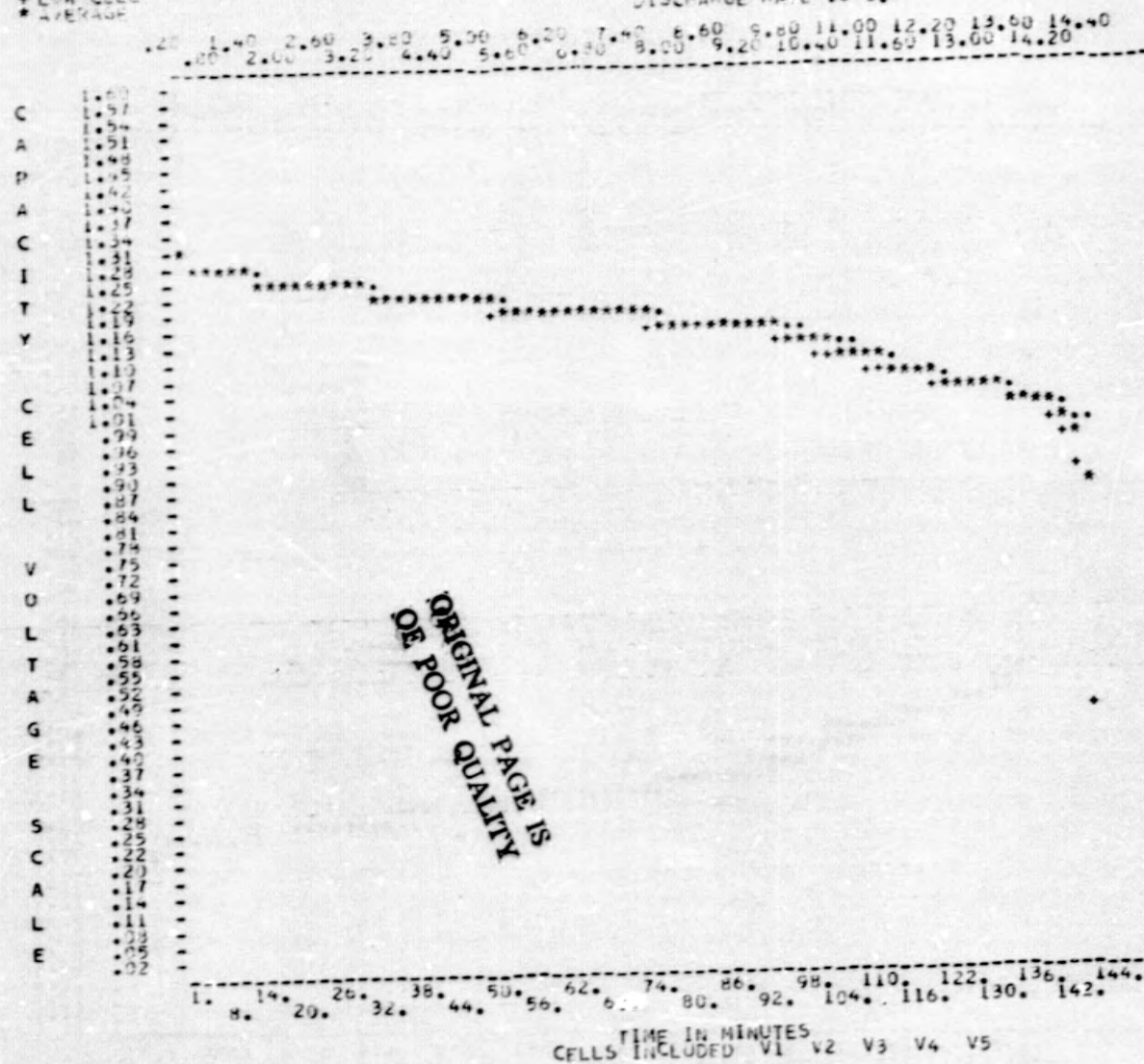


FIGURE 84

KEY
 * HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 209A
 SHADOW PERIOD IS 8
 CYCLE NUMBER IS 1296
 DISCHARGE RATE IS 6.0

AMPERE HOUR OUT

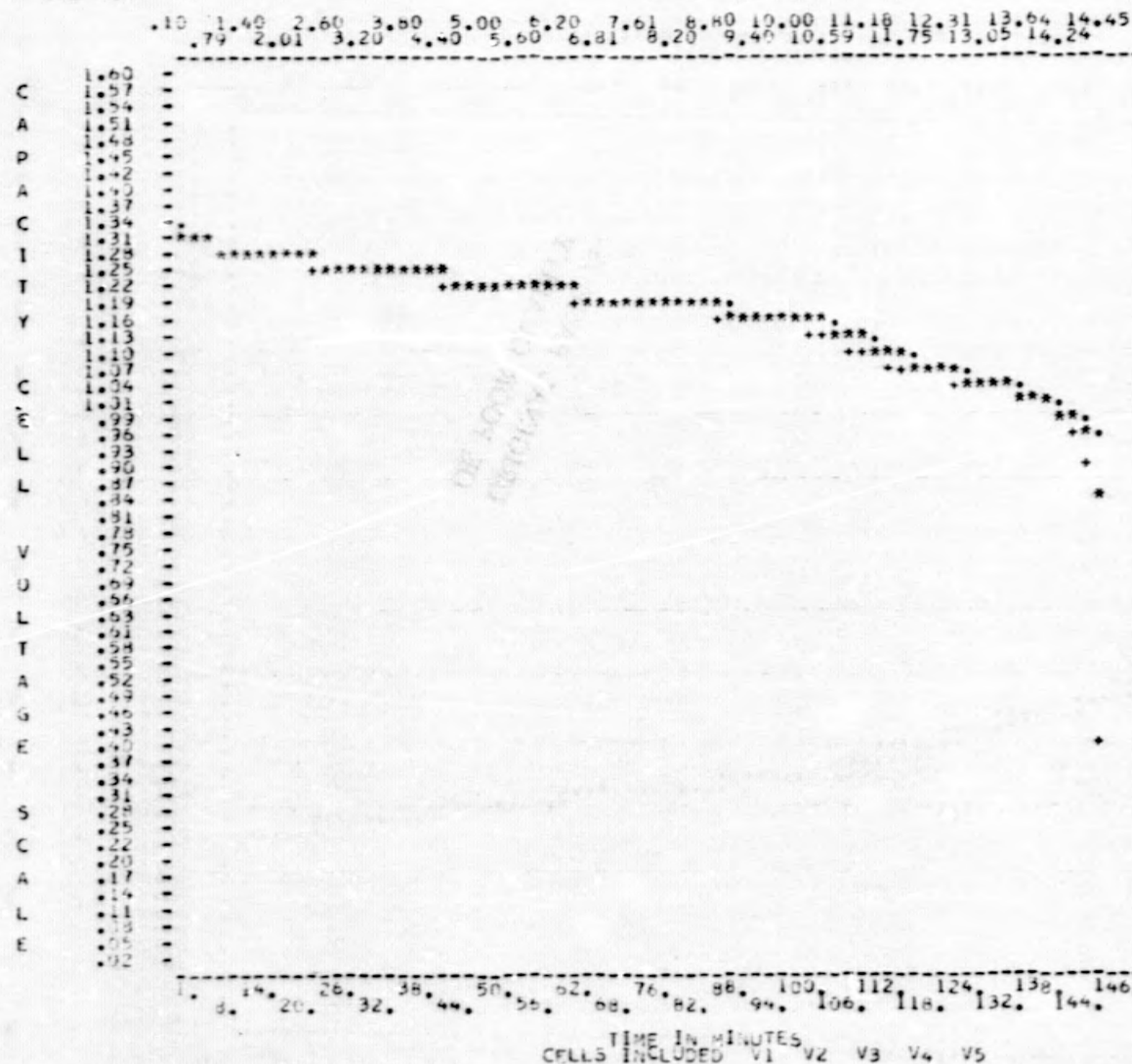


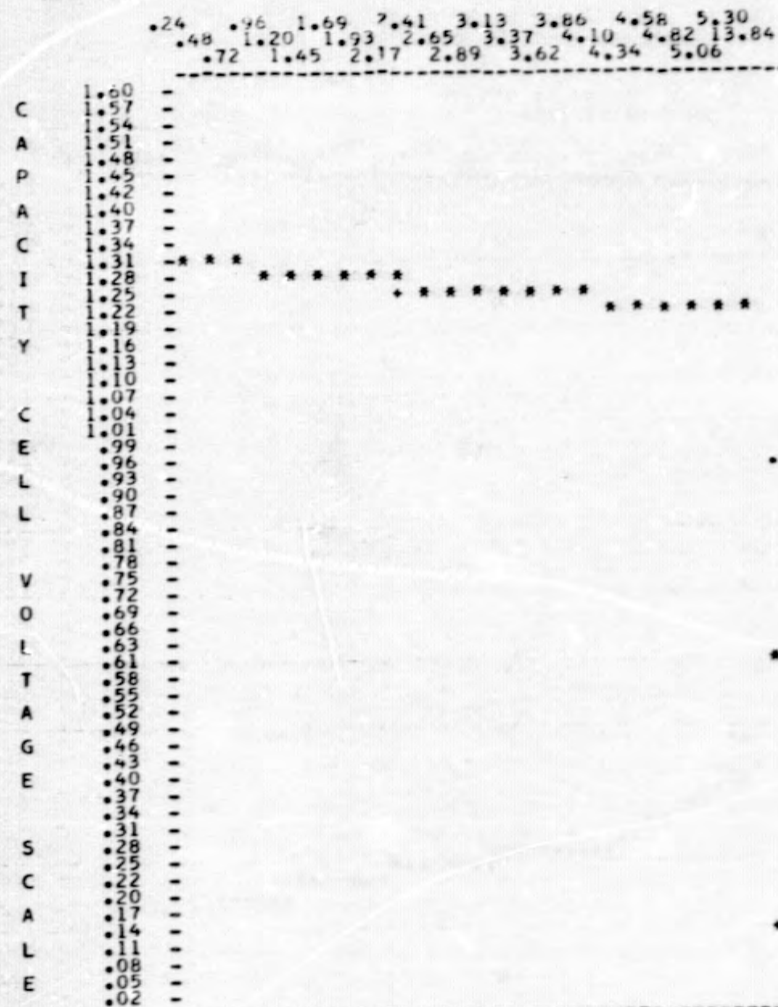
FIGURE 85

KEY
 + HIGH CELL
 - LOW CELL
 * AVERAGE

PACK NUMBER IS 209A
 SHADOW PERIOD IS 9
 CYCLE NUMBER IS 1477.
 DISCHARGE RATE IS 6.0

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AMPERE HOUR OUT



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TIME IN MINUTES
 CELLS INCLUDED A5 V1 V2 V3 V4 V5

FIGURE 86

KEY
 * HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 209A
 SHADOW PERIOD IS 10
 CYCLE NUMBER IS 1635
 DISCHARGE RATE IS 6.0

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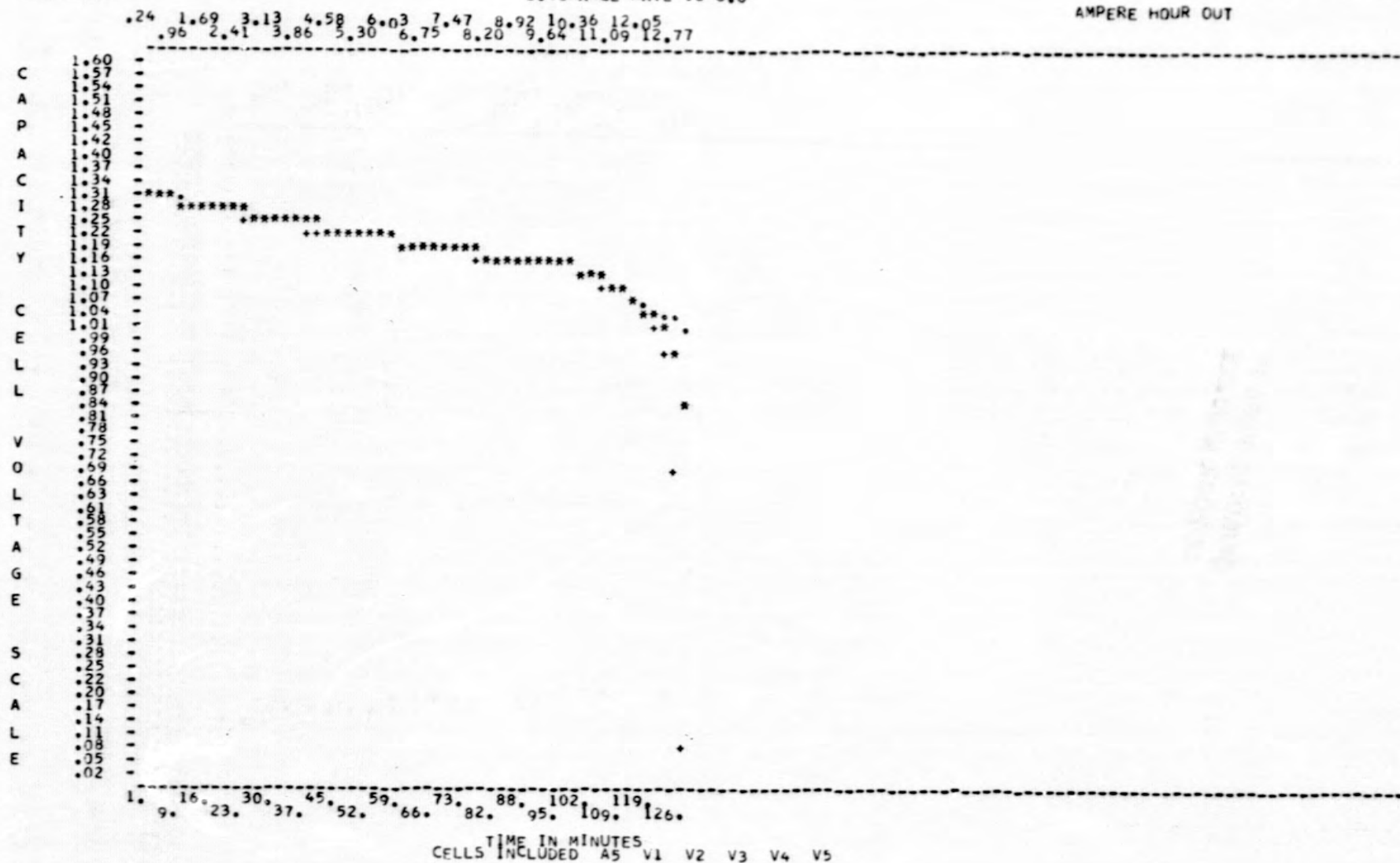
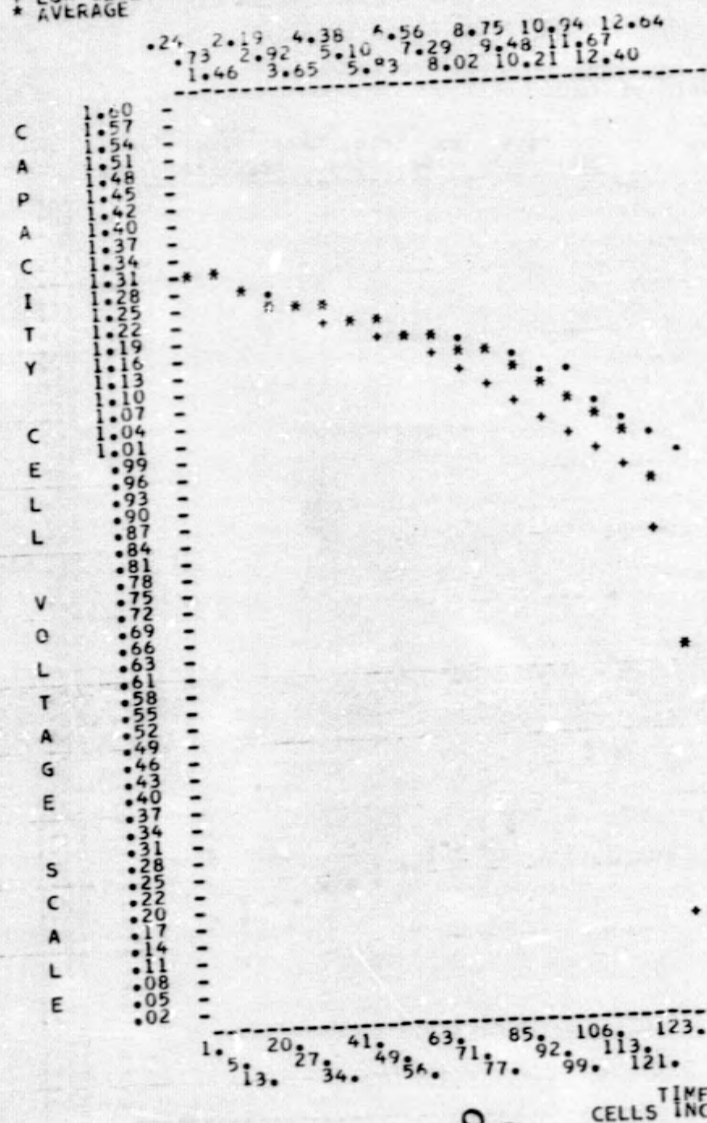


FIGURE 87

PACK NUMBER IS 209A
SHADOW PERIOD IS 12
CYCLE NUMBER IS 2123.
DISCHARGE RATE IS 6.0

AMPERE HOUR OUT



| TIME IN MINUTES | | A5 | V1 | V2 | V3 | V4 | V5 |
|-----------------|--|----|----|----|----|----|----|
| CELLS INCLUDED | | | | | | | |

209

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KEY
 • HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 209A
 SHADOW PERIOD IS 13
 CYCLE NUMBER IS 2402.
 DISCHARGE RATE IS 6.0

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AMPERE HOUR OUT

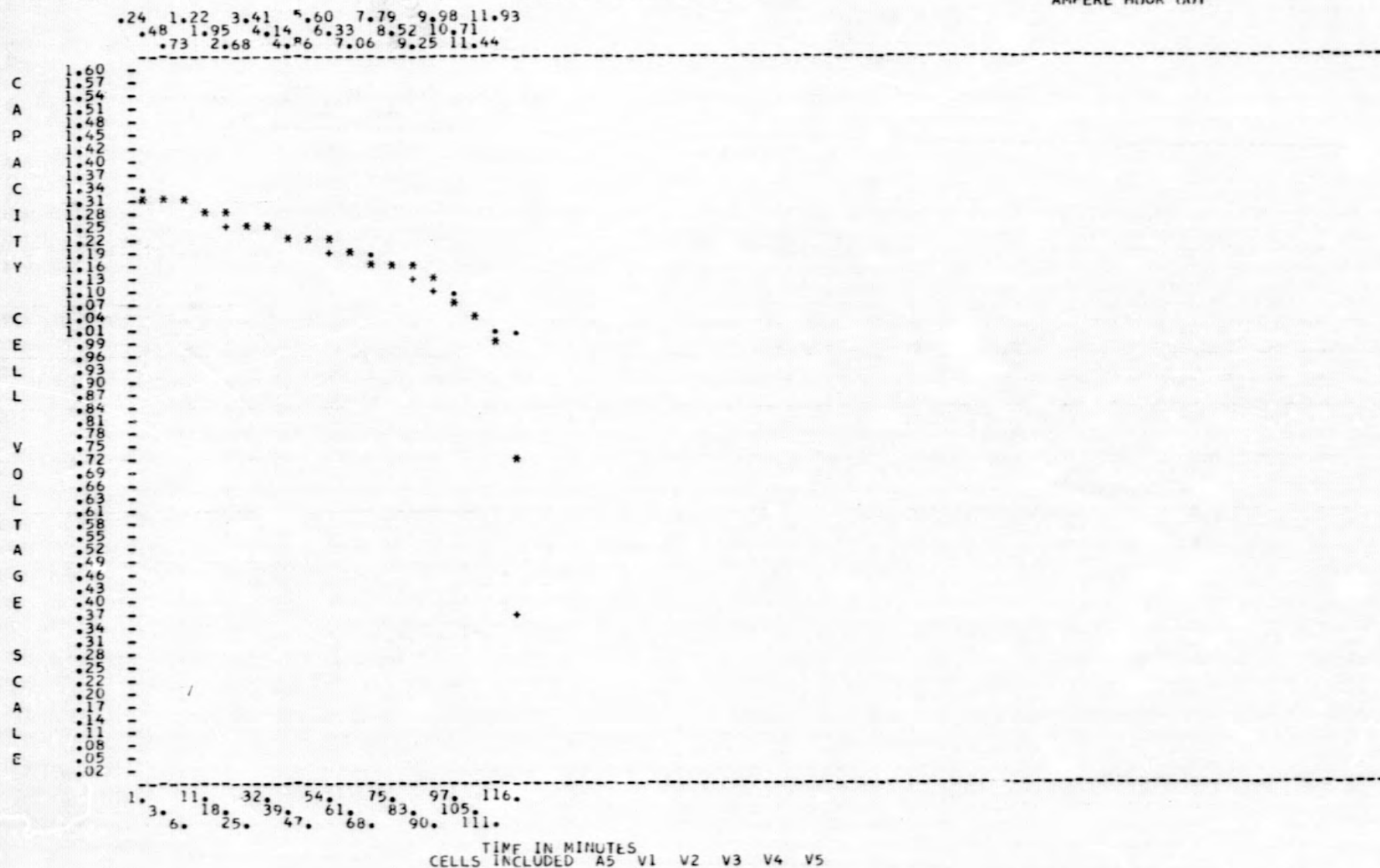


FIGURE 89

KEY
 + HIGH CELL
 * LOW CELL
 * AVERAGE

PACK NUMBER IS 209A
 SHADOW PERIOD IS 14
 CYCLE NUMBER IS 2584
 DISCHARGE RATE IS 6.0

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AMPERE HOUR OUT

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84
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22
20
17
14
11
08
05
02

24 3.16 6.08 9.99 11.67
 1.22 4.13 7.05 9.97
 2.19 5.11 8.02 10.94

1 11 20 30 40 59 68 74 87 97 107 114

TIME IN MINUTES
 CELLS INCLUDED A5 V1 V2 V3 V4 V5

FIGURE 90

ORIGINAL PAGE IS
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KEY
 * AVE END DISCHARGE VOLTAGE
 + AVE CELL VOLTAGE AT TRIP
 A AVE CELL VOLTAGE AT EOC
 B AVE AUX-ELECT. VOLT. AT EOD
 X PRESSURE TRANS. AT EOD
 Y PRESSURE TRANS. AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 209A

DEPTH DISCHARGE 60 WQEC/C 77-134
 TEMPERATURE 20
 AMPERE RATE 12
 CATALOG 42B012AB
 SERIAL 10-5, 10-6, 9-8, 9-10, 9-13
 GENERAL ELECTRIC CELLS
 PROJECT AT5 F/G (Prototype)

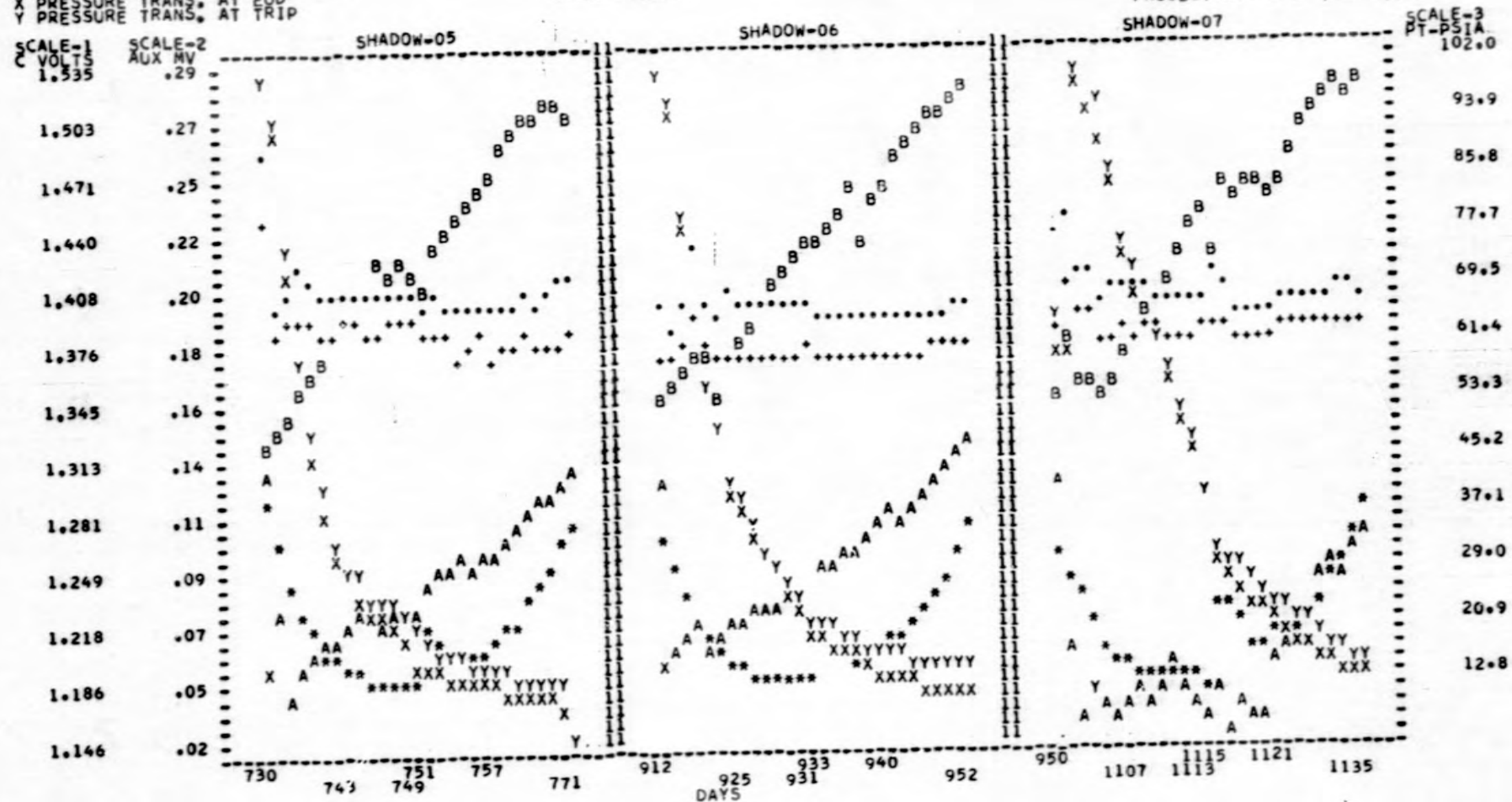


FIGURE 91

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 209A

DEPTH DISCHARGE 60 mEC/C
TEMPERATURE 20
AMPERE RATE 12
CATALOG 428012AB
SERIAL 10-5,10-5,9-8,9-10,9-13
GENERAL ELECTRIC CFLS
PROJECT ATS F/G (Prototype)

REC/C 77-13

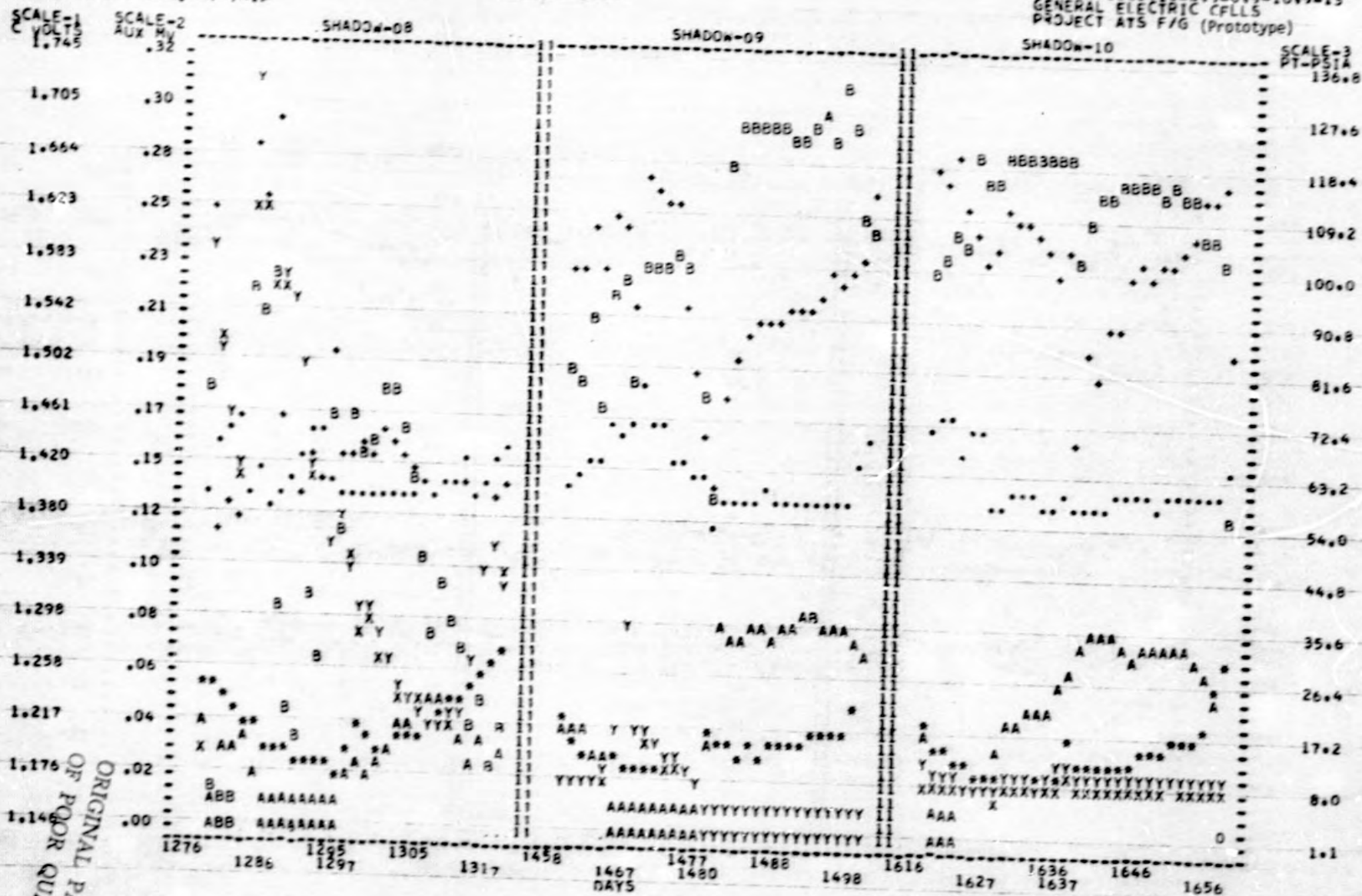


FIGURE 92

ORIGINAL PAGE IS
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KEY
 * AVE END DISCHARGE VOLTAGE
 + AVE CELL VOLTAGE AT TRIP
 . AVE CELL VOLTAGE AT EOC
 A AVE AUX-ELECT. VOLT. AT EOD
 B AVE AUX-ELECT. VOLT. AT TRIP
 X PRESSURE TRANS. AT EOD
 Y PRESSURE TRANS. AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 209A

DEPTH DISCHARGE 60
 TEMPERATURE 20
 AMPERE RATE 12
 CATALOG 42B012AB
 SERIAL 10-5,10-6,9-8,9-10,9-13
 GENERAL ELECTRIC CELLS
 PROJECT ATS F/G (Prototype)

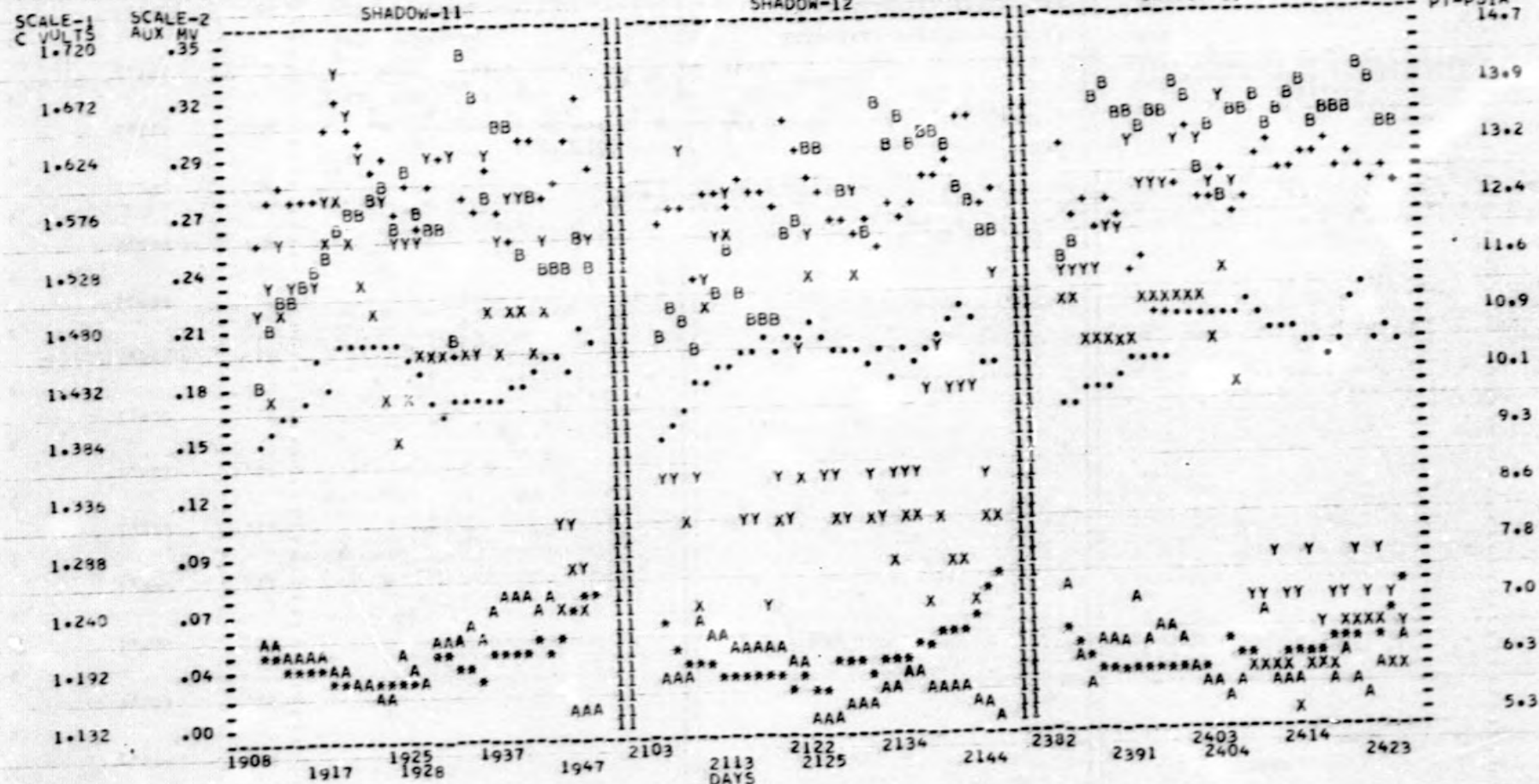
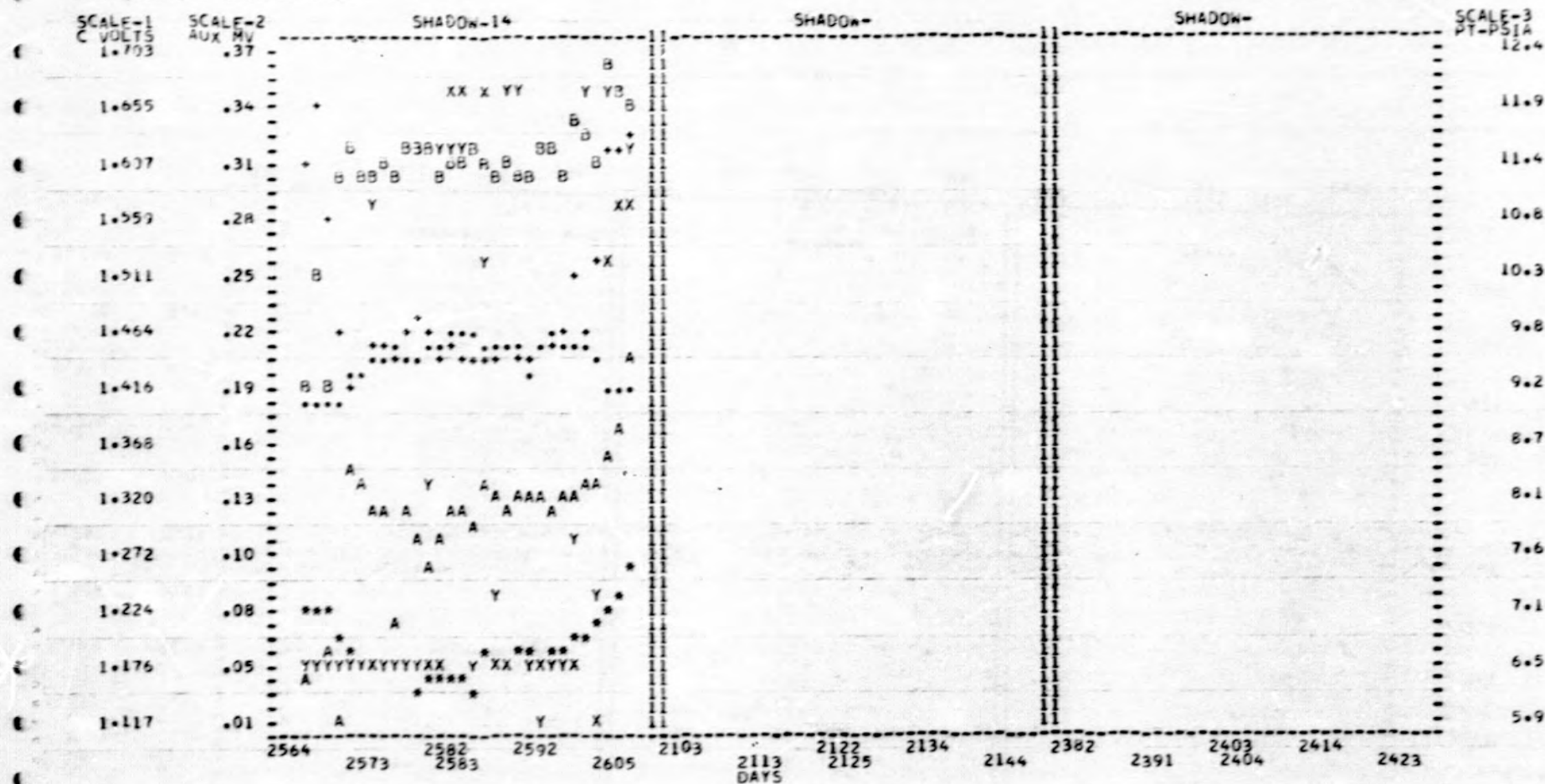


FIGURE 93

DEPTH DISCHARGE 60
TEMPERATURE 20
AMPERE RATE 12 WQEC/C 77-134
CATALOG 428012AB
SERIAL 10-5-10-6,9-8,9-10,9-13
GENERAL ELECTRIC CELLS
PROJECT 3TS F/G (Prototype)



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OF POOR QUALITY

FIGURE 94

2 KEY
 * AHO
 * AHI - TOTAL
 * AHI AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 209A

DEPTH DISCHARGE 60
 TEMPERATURE 20 WQEC/C 77-134
 AMPERE RATE 12
 CATALOG 42801328
 SERIAL 10-5-10-6-9-8-9-10-9-13
 GENERAL ELECTRIC CELLS
 PROJECT ATS F/G (Prototype)

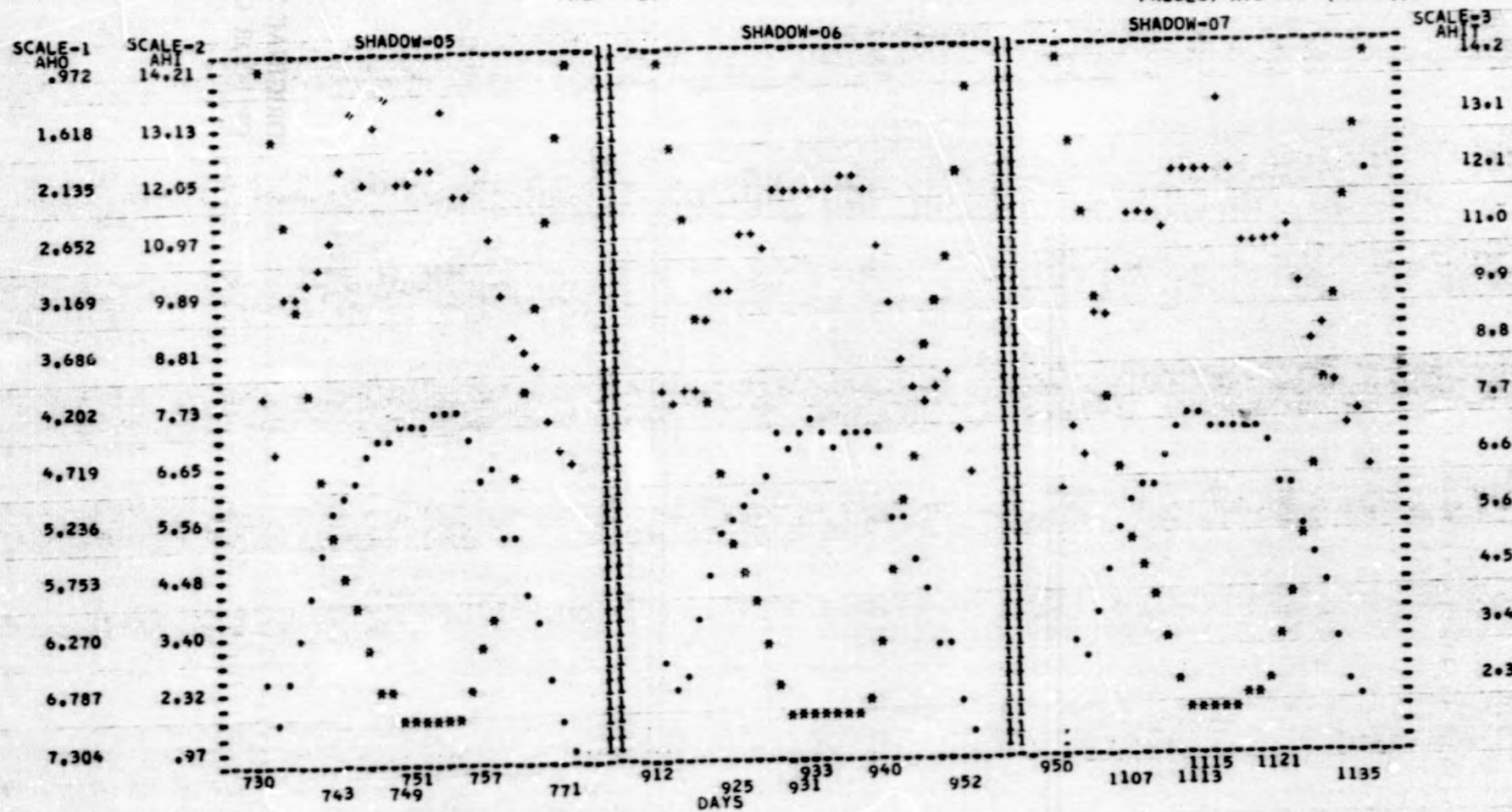


FIGURE 95

KEY
 * AHO
 * AHI-TOTAL
 * AHI AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 209A

DEPTH DISCHARGE 60
 TEMPERATURE 20
 AMPERE RATE 12
 CATALOG 428012AB
 SERIAL 10-5-10-8-9-8-9-10-9-13
 GENERAL ELECTRIC CFLLS
 PROJECT ATS F/G (Prototype)

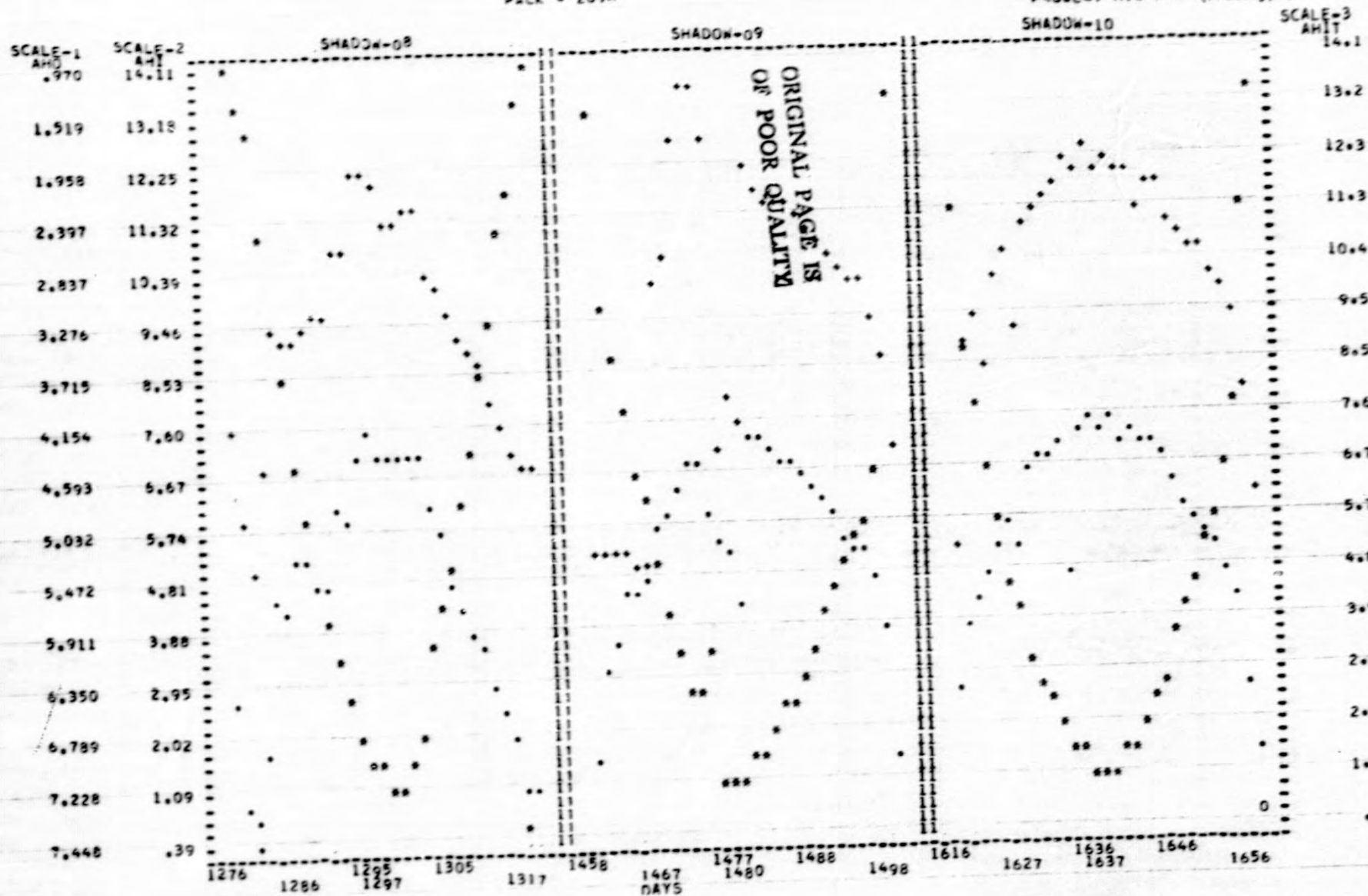


FIGURE 96

KEY
 * AHD
 * AHI-TOTAL
 * AHI AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 209A

DEPTH DISCHARGE 60
 TEMPERATURE 20
 AMPERE RATE 12 WQEC/C 77-134
 CATALOG 428012AB
 SERIAL 10-5,10-6,9-8,9-10,9-13
 GENERAL ELECTRIC CELLS
 PROJECT AT5 F/G (Prototype)

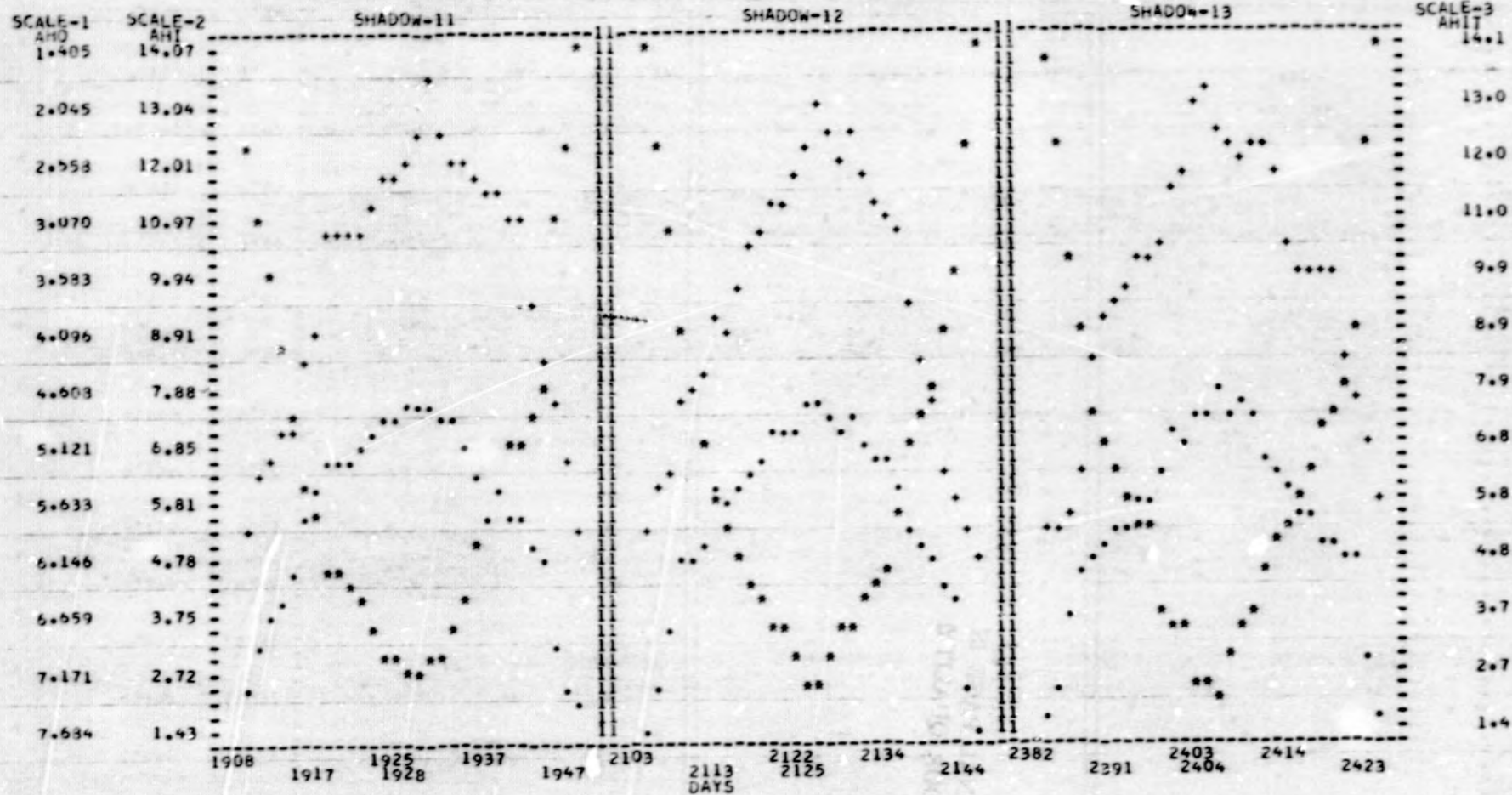


FIGURE 97

• 1-1-TOTAL
• AMT AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 209A

DEPTH DISCHARGE 60
TEMPERATURE 20 WQEC/C 77-134
AMPERE RATE 12
CATOLOG 428012AB
SERIAL 10-S-10-6,9-8,9-10,9-13
GENERAL ELECTRIC CELLS
PROJECT ATS F/G (Prototype)

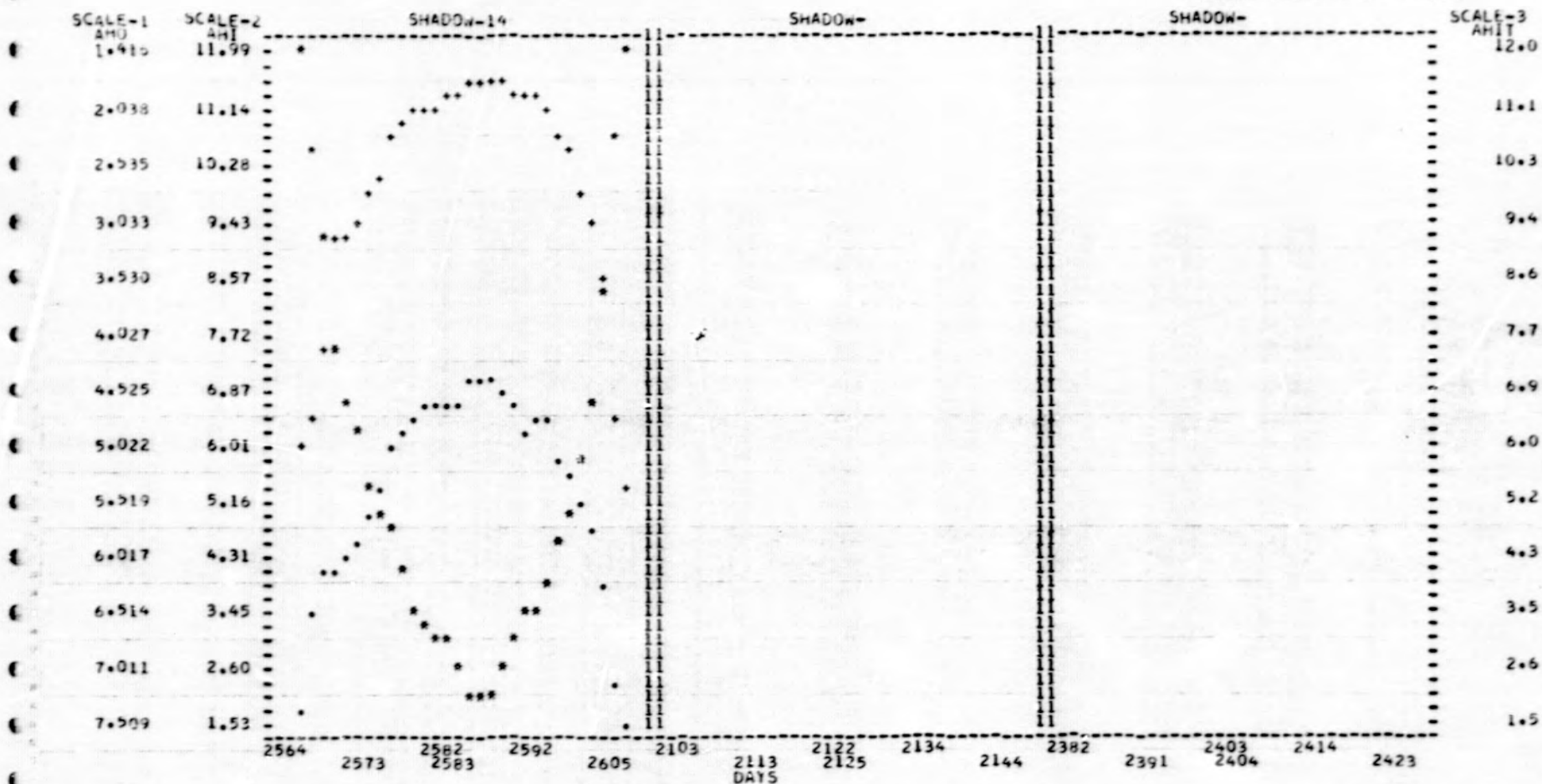


FIGURE 96

219

ORIGINAL PAGE IS
OF POOR QUALITY

DATE OF RUN IS 09/14/76

PACK NUMBER IS 209A

SHADOW PERIOD IS 6

CYCLE IS

932.

| TIME | AMP5 | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 1. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.318 | .000 | 1.318 | 1.320 | 1.316 |
| 4. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.303 | .000 | 1.303 | 1.304 | 1.301 |
| 8. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.299 | .000 | 1.299 | 1.300 | 1.298 |
| 12. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.295 | .000 | 1.295 | 1.296 | 1.294 |
| 16. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.291 | .000 | 1.291 | 1.292 | 1.290 |
| 20. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.287 | .000 | 1.287 | 1.288 | 1.286 |
| 24. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.283 | .000 | 1.283 | 1.284 | 1.282 |
| 28. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.279 | .000 | 1.279 | 1.280 | 1.278 |
| 32. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.275 | .000 | 1.275 | 1.276 | 1.274 |
| 36. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.271 | .000 | 1.271 | 1.272 | 1.270 |
| 40. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.267 | .000 | 1.267 | 1.268 | 1.266 |
| 44. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.263 | .000 | 1.263 | 1.264 | 1.262 |
| 48. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.259 | .000 | 1.259 | 1.260 | 1.258 |
| 52. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.255 | .000 | 1.255 | 1.256 | 1.254 |
| 56. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.251 | .000 | 1.251 | 1.252 | 1.250 |
| 60. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.247 | .000 | 1.247 | 1.248 | 1.246 |
| 64. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.243 | .000 | 1.243 | 1.244 | 1.242 |
| 68. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.239 | .000 | 1.239 | 1.240 | 1.238 |
| 72. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.235 | .000 | 1.235 | 1.236 | 1.234 |
| 76. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.231 | .000 | 1.231 | 1.232 | 1.230 |
| 80. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.227 | .000 | 1.227 | 1.228 | 1.226 |
| 84. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.223 | .000 | 1.223 | 1.224 | 1.222 |
| 88. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.219 | .000 | 1.219 | 1.220 | 1.218 |
| 92. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.215 | .000 | 1.215 | 1.216 | 1.214 |
| 96. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.211 | .000 | 1.211 | 1.212 | 1.210 |
| 100. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.207 | .000 | 1.207 | 1.208 | 1.206 |
| 104. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.203 | .000 | 1.203 | 1.204 | 1.202 |
| 108. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.199 | .000 | 1.199 | 1.200 | 1.198 |
| 112. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.195 | .000 | 1.195 | 1.196 | 1.194 |
| 116. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.191 | .000 | 1.191 | 1.192 | 1.190 |
| 120. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.187 | .000 | 1.187 | 1.188 | 1.186 |
| 124. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.183 | .000 | 1.183 | 1.184 | 1.182 |
| 128. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.179 | .000 | 1.179 | 1.180 | 1.178 |
| 132. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.175 | .000 | 1.175 | 1.176 | 1.174 |
| 136. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.171 | .000 | 1.171 | 1.172 | 1.170 |
| 140. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.167 | .000 | 1.167 | 1.168 | 1.166 |
| 144. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.163 | .000 | 1.163 | 1.164 | 1.162 |
| 148. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.159 | .000 | 1.159 | 1.160 | 1.158 |
| 152. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.155 | .000 | 1.155 | 1.156 | 1.154 |
| 156. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.151 | .000 | 1.151 | 1.152 | 1.150 |
| 160. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.147 | .000 | 1.147 | 1.148 | 1.146 |
| 164. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.143 | .000 | 1.143 | 1.144 | 1.142 |
| 168. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.139 | .000 | 1.139 | 1.140 | 1.138 |
| 172. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.135 | .000 | 1.135 | 1.136 | 1.134 |
| 176. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.131 | .000 | 1.131 | 1.132 | 1.130 |
| 180. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.127 | .000 | 1.127 | 1.128 | 1.126 |
| 184. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.123 | .000 | 1.123 | 1.124 | 1.122 |
| 188. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.119 | .000 | 1.119 | 1.120 | 1.118 |
| 192. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.115 | .000 | 1.115 | 1.116 | 1.114 |
| 196. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.111 | .000 | 1.111 | 1.112 | 1.110 |
| 200. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.107 | .000 | 1.107 | 1.108 | 1.106 |
| 204. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.103 | .000 | 1.103 | 1.104 | 1.102 |
| 208. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.099 | .000 | 1.099 | 1.100 | 1.098 |
| 212. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.095 | .000 | 1.095 | 1.096 | 1.094 |
| 216. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.091 | .000 | 1.091 | 1.092 | 1.090 |
| 220. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.087 | .000 | 1.087 | 1.088 | 1.086 |
| 224. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.083 | .000 | 1.083 | 1.084 | 1.082 |
| 228. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.079 | .000 | 1.079 | 1.080 | 1.078 |
| 232. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.075 | .000 | 1.075 | 1.076 | 1.074 |
| 236. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.071 | .000 | 1.071 | 1.072 | 1.070 |
| 240. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.067 | .000 | 1.067 | 1.068 | 1.066 |
| 244. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.063 | .000 | 1.063 | 1.064 | 1.062 |
| 248. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.059 | .000 | 1.059 | 1.060 | 1.058 |
| 252. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.055 | .000 | 1.055 | 1.056 | 1.054 |
| 256. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.051 | .000 | 1.051 | 1.052 | 1.050 |
| 260. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.047 | .000 | 1.047 | 1.048 | 1.046 |
| 264. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.043 | .000 | 1.043 | 1.044 | 1.042 |
| 268. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.039 | .000 | 1.039 | 1.040 | 1.038 |
| 272. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.035 | .000 | 1.035 | 1.036 | 1.034 |
| 276. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.031 | .000 | 1.031 | 1.032 | 1.030 |
| 280. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.027 | .000 | 1.027 | 1.028 | 1.026 |
| 284. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.023 | .000 | 1.023 | 1.024 | 1.022 |
| 288. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.019 | .000 | 1.019 | 1.020 | 1.018 |
| 292. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.015 | .000 | 1.015 | 1.016 | 1.014 |
| 296. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.011 | .000 | 1.011 | 1.012 | 1.010 |
| 300. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.007 | .000 | 1.007 | 1.008 | 1.006 |
| 304. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 1.003 | .000 | 1.003 | 1.004 | 1.002 |
| 308. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 0.999 | .000 | 0.999 | 1.000 | 0.998 |
| 312. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 0.995 | .000 | 0.995 | 0.996 | 0.994 |
| 316. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 0.991 | .000 | 0.991 | 0.992 | 0.990 |
| 320. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 0.987 | .000 | 0.987 | 0.988 | 0.986 |
| 324. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 0.983 | .000 | 0.983 | 0.984 | 0.982 |
| 328. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 0.979 | .000 | 0.979 | 0.980 | 0.978 |
| 332. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 0.975 | .000 | 0.975 | 0.976 | 0.974 |
| 336. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 0.971 | .000 | 0.971 | 0.972 | 0.970 |
| 340. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 0.967 | .000 | 0.967 | 0.968 | 0.966 |
| 344. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 0.963 | .000 | 0.963 | 0.964 | 0.962 |
| 348. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 0.959 | .000 | 0.959 | 0.960 | 0.958 |
| 352. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 0.955 | .000 | 0.955 | 0.956 | 0.954 |
| 356. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 0.951 | .000 | 0.951 | 0.952 | 0.950 |
| 360. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 0.947 | .000 | 0.947 | 0.948 | 0.946 |
| 364. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 0.943 | .000 | 0.943 | 0.944 | 0.942 |
| 368. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 0.939 | .000 | 0.939 | 0.940 | 0.938 |
| 372. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 0.935 | .000 | 0.935 | 0.936 | 0.934 |
| 376. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 0.931 | .000 | 0.931 | 0.932 | 0.930 |
| 380. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 0.927 | .000 | 0.927 | 0.928 | 0.926 |
| 384. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | 0.923 | .000 | 0.923 | 0.924 | 0.922 |
| 388. | 0.098 | V1 | 17 | V1 | 33 | V4 | 317 | | | | | |

PAGE 15 12.

| HIGH-V | LOW-V |
|--------|-------|
| 1.035 | 082 |
| 1.035 | 070 |
| 1.035 | 061 |
| 1.035 | 052 |
| 1.035 | 050 |
| 1.035 | 046 |
| 1.035 | 035 |
| 1.035 | 030 |
| 1.035 | 027 |
| 1.035 | 016 |
| 1.035 | 009 |
| 1.035 | 007 |
| 1.035 | 005 |
| 1.035 | 003 |
| 1.035 | 002 |
| 1.035 | 001 |

932.

| AVE-V |
|-------|
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CYCLE 15

| CELL-V |
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SHADOW PERIOD 15 6

| CELL-V | CELL-V |
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PAGE NUMBER 15 209A

| CELL-V | CELL-V |
|--------|--------|
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DATE UP 15 09/14/76

| CELL-V | CELL-V |
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| AMPS |
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ORIGINAL PAGE IS
OF POOR QUALITY

DATE OF RUN IS 09/14/76

PACK NUMBER IS 209A

SHADOW PERIOD IS 7

CYCLE IS

1114.

| TIME | AAPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 1. | 200 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.302 | 304 | 301 |
| 4. | 400 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.288 | 288 | 288 |
| 8. | 600 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.280 | 280 | 279 |
| 12. | 800 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.274 | 274 | 273 |
| 16. | 1000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.270 | 270 | 266 |
| 20. | 1200 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.266 | 266 | 265 |
| 24. | 1400 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.262 | 262 | 261 |
| 28. | 1600 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.259 | 259 | 258 |
| 32. | 1800 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.256 | 256 | 255 |
| 36. | 2000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.252 | 252 | 251 |
| 40. | 2200 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.249 | 249 | 248 |
| 44. | 2400 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.246 | 246 | 245 |
| 48. | 2600 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.240 | 240 | 239 |
| 52. | 2800 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.236 | 236 | 235 |
| 56. | 3000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.233 | 233 | 232 |
| 60. | 3200 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.230 | 230 | 229 |
| 64. | 3400 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.227 | 227 | 226 |
| 68. | 3600 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.223 | 223 | 222 |
| 72. | 3800 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.220 | 220 | 219 |
| 76. | 4000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.217 | 217 | 216 |
| 80. | 4200 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.214 | 214 | 213 |
| 84. | 4400 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.211 | 211 | 210 |
| 88. | 4600 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.208 | 208 | 207 |
| 92. | 4800 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.205 | 205 | 204 |
| 96. | 5000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.202 | 202 | 201 |
| 100. | 5200 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.198 | 198 | 197 |
| 104. | 5400 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.195 | 195 | 194 |
| 108. | 5600 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.191 | 191 | 190 |
| 112. | 5800 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.189 | 189 | 188 |
| 116. | 6000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.187 | 187 | 186 |
| 120. | 6200 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.184 | 184 | 183 |
| 124. | 6400 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.182 | 182 | 181 |
| 128. | 6600 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.180 | 180 | 179 |
| 132. | 6800 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.178 | 178 | 177 |
| 136. | 7000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.174 | 174 | 173 |
| 140. | 7200 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.173 | 173 | 172 |
| 144. | 7400 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.171 | 171 | 170 |
| 148. | 7600 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.169 | 169 | 168 |
| 152. | 7800 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.168 | 168 | 167 |
| 156. | 8000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.166 | 166 | 165 |
| 160. | 8200 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.165 | 165 | 164 |
| 164. | 8400 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.163 | 163 | 162 |
| 168. | 8600 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.162 | 162 | 161 |
| 172. | 8800 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.161 | 161 | 160 |
| 176. | 9000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.159 | 159 | 158 |
| 180. | 9200 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.157 | 157 | 156 |
| 184. | 9400 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.155 | 155 | 154 |
| 188. | 9600 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.153 | 153 | 152 |
| 192. | 9800 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.150 | 150 | 149 |
| 196. | 10000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.147 | 147 | 146 |
| 200. | 10200 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.143 | 143 | 142 |
| 204. | 10400 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.139 | 139 | 138 |
| 208. | 10600 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.130 | 130 | 129 |
| 212. | 10800 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.129 | 129 | 128 |
| 216. | 11000 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.116 | 116 | 115 |
| 220. | 11200 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | V1 | 1.107 | 107 | 106 |

DATE OF RUN IS 09/14/76

PAGE NUMBER IS 209A

SHADOW PERIOD IS 7

CYCLE IS 1114.

PAGE IS 14.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 08. | 0.000 | 1.099 | 1.101 | 1.085 | 1.099 | 1.101 | 1.085 | 1.099 | 1.101 | 1.085 | 1.099 | 1.101 |
| 09. | 0.000 | 1.091 | 1.093 | 1.076 | 1.091 | 1.093 | 1.076 | 1.091 | 1.093 | 1.076 | 1.091 | 1.093 |
| 10. | 0.000 | 1.084 | 1.086 | 1.071 | 1.084 | 1.086 | 1.071 | 1.084 | 1.086 | 1.071 | 1.084 | 1.086 |
| 11. | 0.000 | 1.077 | 1.079 | 1.065 | 1.077 | 1.079 | 1.065 | 1.077 | 1.079 | 1.065 | 1.077 | 1.079 |
| 12. | 0.000 | 1.070 | 1.071 | 1.054 | 1.070 | 1.071 | 1.054 | 1.070 | 1.071 | 1.054 | 1.070 | 1.071 |
| 13. | 0.000 | 1.063 | 1.064 | 1.051 | 1.063 | 1.064 | 1.051 | 1.063 | 1.064 | 1.051 | 1.063 | 1.064 |
| 14. | 0.000 | 1.056 | 1.057 | 1.048 | 1.056 | 1.057 | 1.048 | 1.056 | 1.057 | 1.048 | 1.056 | 1.057 |
| 15. | 0.000 | 1.053 | 1.054 | 1.045 | 1.053 | 1.054 | 1.045 | 1.053 | 1.054 | 1.045 | 1.053 | 1.054 |
| 16. | 0.000 | 1.048 | 1.049 | 1.041 | 1.048 | 1.049 | 1.041 | 1.048 | 1.049 | 1.041 | 1.048 | 1.049 |
| 17. | 0.000 | 1.044 | 1.046 | 1.033 | 1.044 | 1.046 | 1.033 | 1.044 | 1.046 | 1.033 | 1.044 | 1.046 |
| 18. | 0.000 | 1.034 | 1.038 | 1.026 | 1.034 | 1.038 | 1.026 | 1.034 | 1.038 | 1.026 | 1.034 | 1.038 |
| 19. | 0.000 | 1.029 | 1.034 | 1.020 | 1.029 | 1.034 | 1.020 | 1.029 | 1.034 | 1.020 | 1.029 | 1.034 |
| 20. | 0.000 | 1.022 | 1.029 | 1.009 | 1.022 | 1.029 | 1.009 | 1.022 | 1.029 | 1.009 | 1.022 | 1.029 |
| 21. | 0.000 | 1.014 | 1.015 | 0.991 | 1.014 | 1.015 | 0.991 | 1.014 | 1.015 | 0.991 | 1.014 | 1.015 |
| 22. | 0.000 | 0.990 | 0.999 | 0.963 | 0.990 | 0.999 | 0.963 | 0.990 | 0.999 | 0.963 | 0.990 | 0.999 |
| 23. | 0.000 | 0.964 | 0.999 | 0.892 | 0.964 | 0.999 | 0.892 | 0.964 | 0.999 | 0.892 | 0.964 | 0.999 |
| 24. | 0.000 | 0.857 | 0.991 | 0.451 | 0.857 | 0.991 | 0.451 | 0.857 | 0.991 | 0.451 | 0.857 | 0.991 |

ORIGINAL PAGE IS
OF POOR QUALITY

[illegible]

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|------|------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 1030 | 241 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1033 | 242 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1035 | 243 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1038 | 244 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1040 | 245 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1042 | 246 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1045 | 247 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1047 | 248 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1050 | 249 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1052 | 250 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1054 | 251 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1057 | 252 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1100 | 253 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1102 | 254 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1104 | 255 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1106 | 256 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1109 | 257 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1111 | 258 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1114 | 259 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1117 | 260 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1120 | 261 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1123 | 262 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1126 | 263 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1129 | 264 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1132 | 265 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1135 | 266 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1138 | 267 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1141 | 268 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1144 | 269 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1147 | 270 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1150 | 271 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1153 | 272 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1156 | 273 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1159 | 274 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1202 | 275 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1205 | 276 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1208 | 277 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1211 | 278 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1214 | 279 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1217 | 280 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1220 | 281 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1223 | 282 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1226 | 283 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1229 | 284 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1232 | 285 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1235 | 286 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1238 | 287 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1241 | 288 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1244 | 289 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1247 | 290 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1250 | 291 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1253 | 292 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1256 | 293 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1259 | 294 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1302 | 295 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1305 | 296 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1308 | 297 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1311 | 298 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1314 | 299 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1317 | 300 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1320 | 301 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1323 | 302 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1326 | 303 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1329 | 304 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1332 | 305 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1335 | 306 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1338 | 307 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1341 | 308 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1344 | 309 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1347 | 310 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1350 | 311 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1353 | 312 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1356 | 313 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1359 | 314 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1402 | 315 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1405 | 316 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1408 | 317 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1411 | 318 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1414 | 319 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1417 | 320 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1420 | 321 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1423 | 322 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1426 | 323 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1429 | 324 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1432 | 325 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1435 | 326 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1438 | 327 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1441 | 328 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1444 | 329 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1447 | 330 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1450 | 331 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1453 | 332 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1456 | 333 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1459 | 334 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1502 | 335 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1505 | 336 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1508 | 337 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1511 | 338 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1514 | 339 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1517 | 340 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1520 | 341 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1523 | 342 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1526 | 343 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1529 | 344 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1532 | 345 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1535 | 346 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1538 | 347 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1541 | 348 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1544 | 349 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1547 | 350 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1550 | 351 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1553 | 352 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1556 | 353 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1559 | 354 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | 175 | 175 |
| 1602 | 355 | A5 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 320 | | |

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DATE OF RUN IS 09/10/76

PACK NUMBER IS 209A

SHADOW PERIOD IS 12

CYCLE IS

2123.

PAGE IS 24.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|-------|------|--------|---------|----------|----------|----------|----------|--------|--------|-------|--------|-------|
| 951. | .243 | A5 | .045 V1 | 1.318 V2 | 1.319 V3 | 1.318 V4 | 1.317 V5 | 1.319 | .000 | 1.318 | 1.319 | 1.317 |
| 953. | .729 | A5 | .070 V1 | 1.293 V2 | 1.298 V3 | 1.298 V4 | 1.297 V5 | 1.298 | .000 | 1.297 | 1.298 | 1.293 |
| 1003. | .458 | A5 | .070 V1 | 1.272 V2 | 1.279 V3 | 1.279 V4 | 1.279 V5 | 1.279 | .000 | 1.278 | 1.279 | 1.272 |
| 1010. | .187 | A5 | .067 V1 | 1.257 V2 | 1.264 V3 | 1.264 V4 | 1.264 V5 | 1.264 | .000 | 1.263 | 1.264 | 1.257 |
| 1017. | .916 | A5 | .067 V1 | 1.243 V2 | 1.252 V3 | 1.251 V4 | 1.252 V5 | 1.252 | .000 | 1.250 | 1.252 | 1.243 |
| 1024. | .647 | A5 | .057 V1 | 1.231 V2 | 1.240 V3 | 1.240 V4 | 1.240 V5 | 1.240 | .000 | 1.238 | 1.240 | 1.231 |
| 1031. | .376 | A5 | .057 V1 | 1.218 V2 | 1.229 V3 | 1.228 V4 | 1.229 V5 | 1.229 | .000 | 1.227 | 1.229 | 1.218 |
| 1039. | .105 | A5 | .050 V1 | 1.205 V2 | 1.217 V3 | 1.216 V4 | 1.217 V5 | 1.217 | .000 | 1.214 | 1.217 | 1.205 |
| 1046. | .834 | A5 | .047 V1 | 1.189 V2 | 1.204 V3 | 1.203 V4 | 1.204 V5 | 1.203 | .000 | 1.201 | 1.204 | 1.189 |
| 1053. | .563 | A5 | .045 V1 | 1.169 V2 | 1.190 V3 | 1.188 V4 | 1.189 V5 | 1.189 | .000 | 1.185 | 1.190 | 1.169 |
| 1100. | .292 | A5 | .044 V1 | 1.135 V2 | 1.176 V3 | 1.174 V4 | 1.176 V5 | 1.176 | .000 | 1.167 | 1.176 | 1.135 |
| 1107. | .021 | A5 | .044 V1 | 1.093 V2 | 1.166 V3 | 1.163 V4 | 1.166 V5 | 1.166 | .000 | 1.151 | 1.166 | 1.093 |
| 1115. | .750 | A5 | .043 V1 | 1.061 V2 | 1.154 V3 | 1.148 V4 | 1.157 V5 | 1.157 | .000 | 1.135 | 1.157 | 1.061 |
| 1122. | .479 | A5 | .043 V1 | 1.043 V2 | 1.124 V3 | 1.118 V4 | 1.140 V5 | 1.145 | .000 | 1.114 | 1.145 | 1.043 |
| 1129. | .208 | A5 | .041 V1 | 1.023 V2 | 1.089 V3 | 1.083 V4 | 1.097 V5 | 1.119 | .000 | 1.082 | 1.119 | 1.023 |
| 1136. | .937 | A5 | .037 V1 | .993 V2 | 1.060 V3 | 1.055 V4 | 1.055 V5 | 1.073 | .000 | 1.047 | 1.073 | .993 |
| 1143. | .667 | A5 | .033 V1 | .963 V2 | 1.035 V3 | 1.032 V4 | 1.015 V5 | 1.028 | .000 | 1.015 | 1.035 | .963 |
| 1151. | .396 | A5 | .032 V1 | .874 V2 | 1.007 V3 | 1.003 V4 | .839 V5 | .915 | .000 | .928 | 1.007 | .839 |
| 1153. | .639 | A5 | .018 V1 | .789 V2 | .990 V3 | .984 V4 | .281 V5 | .153 | .000 | .639 | .990 | .153 |

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| PACK | DAY | AVE-CELL
V END | CELL
DIS | AUX
ELECT | PRESS
DIS | PRESS
TRIP | AUX
ELEC | AVE-CELL
V END | AVE-CELL
V END | AHC | AHI | AHI-TRIP |
|------|------|-------------------|-------------|--------------|--------------|---------------|-------------|-------------------|-------------------|--------|--------|----------|
| 209 | 1276 | 0000 | 2518 | 0370 | 0310 | 0310 | 0310 | 0268 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1277 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1278 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1279 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1280 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1281 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1282 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1283 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1284 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1285 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1286 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1287 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1288 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1289 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1290 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1291 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1292 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1293 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1294 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1295 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1296 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1297 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1298 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1299 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1300 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1301 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1302 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1303 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1304 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1305 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1306 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1307 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1308 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1309 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1310 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1311 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1312 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1313 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1314 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1315 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1316 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1317 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1318 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1319 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1320 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1321 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1322 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1323 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1324 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1325 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1326 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1327 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1328 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1329 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1330 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1331 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1332 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1333 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1334 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1335 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1336 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1337 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1338 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1339 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1340 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1341 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1342 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1343 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1344 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1345 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1346 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1347 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1348 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1349 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1350 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1351 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1352 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1353 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1354 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1355 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1356 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1357 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1358 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1359 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1360 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1361 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1362 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1363 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1364 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1365 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1366 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1367 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1368 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1369 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1370 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1371 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1372 | 0000 | 2514 | 0330 | 0310 | 0310 | 0310 | 0269 | 3984 | 1.0000 | 7.5000 | 2.6000 |
| 209 | 1373 | 0000 | 2514 | | | | | | | | | |

| PACK | DAY | AVE-CELL
V END DTS | AUX
ELECT | PRESS
FND DIS | PRESS
END TRIP | AUX
ELEC T | AVE-CELL
V END T | AVE-CELL
V END 2 | AHO | AHI | AHI-TRIP |
|------|-----------|-----------------------|--------------|------------------|-------------------|---------------|---------------------|---------------------|---------|---------|----------|
| 204 | 2564.0000 | 1.2186 | .0410 | 6.5900 | 6.5900 | .1960 | 1.6018 | 1.4020 | 1.5800 | 6.0000 | 2.0000 |
| 204 | 2565.0000 | 1.2202 | .0490 | 6.5900 | 6.5900 | .2480 | 1.6532 | 1.4062 | 2.4300 | 6.0000 | 3.5000 |
| 204 | 2566.0000 | 1.1844 | .0560 | 6.5900 | 6.5900 | .1900 | 1.5596 | 1.4076 | 3.1600 | 7.5200 | 4.0000 |
| 204 | 2567.0000 | 1.1960 | .0100 | 6.5900 | 6.5900 | .3060 | 1.4642 | 1.4096 | 4.1300 | 9.1400 | 4.1810 |
| 204 | 2568.0000 | 1.1840 | .1320 | 6.5900 | 6.5900 | .3150 | 1.4190 | 1.4324 | 4.6200 | 9.3000 | 4.3090 |
| 204 | 2569.0000 | 1.1798 | .1410 | 6.5900 | 6.5900 | .3090 | 1.4306 | 1.4290 | 4.8600 | 9.3300 | 4.4270 |
| 204 | 2570.0000 | 1.1752 | .1290 | 6.5900 | 10.9820 | .3050 | 1.4492 | 1.4370 | 5.3500 | 9.8800 | 5.0420 |
| 204 | 2571.0000 | 1.1736 | .1260 | 6.5900 | 6.5900 | .3070 | 1.4492 | 1.4400 | 5.6000 | 10.1000 | 5.2800 |
| 204 | 2572.0000 | 1.1746 | .0660 | 6.5900 | 6.5900 | .3040 | 1.4424 | 1.4536 | 5.8300 | 10.7800 | 6.0250 |
| 204 | 2573.0000 | 1.1752 | .1260 | 6.5900 | 6.5900 | .3190 | 1.4626 | 1.4336 | 6.0800 | 10.9000 | 6.2040 |
| 204 | 2574.0000 | 1.1752 | .1180 | 6.5900 | 6.5900 | .3180 | 1.4708 | 1.4436 | 6.5600 | 11.2200 | 6.5170 |
| 204 | 2575.0000 | 1.1584 | .0980 | 6.5900 | 8.2370 | .3170 | 1.4606 | 1.4480 | 6.8200 | 11.2000 | 6.6350 |
| 204 | 2576.0000 | 1.1596 | .1190 | 6.5900 | 11.5310 | .3010 | 1.4374 | 1.4552 | 6.88100 | 11.2000 | 6.6320 |
| 204 | 2577.0000 | 1.1604 | .1190 | 6.5900 | 11.5310 | .3130 | 1.4546 | 1.4692 | 7.0500 | 11.3100 | 6.6360 |
| 204 | 2578.0000 | 1.1596 | .1240 | 12.0800 | 11.5310 | .3130 | 1.4424 | 1.4590 | 7.2900 | 11.4000 | 6.7560 |
| 204 | 2579.0000 | 1.1586 | .1260 | 12.0800 | 11.5310 | .3140 | 1.4432 | 1.4598 | 7.5400 | 11.6400 | 7.0120 |
| 204 | 2580.0000 | 1.1512 | .1400 | 12.0800 | 10.4330 | .3110 | 1.4432 | 1.4490 | 7.6900 | 11.6300 | 7.0030 |
| 204 | 2581.0000 | 1.1914 | .1340 | 6.5900 | 7.1390 | .3020 | 1.4390 | 1.4490 | 7.8900 | 11.6300 | 7.0040 |
| 204 | 2582.0000 | 1.1820 | .1360 | 6.5900 | 12.0800 | .3100 | 1.4458 | 1.4520 | 7.0500 | 11.5200 | 6.8850 |
| 204 | 2583.0000 | 1.1804 | .1300 | 6.5900 | 12.0800 | .3060 | 1.4450 | 1.4492 | 6.8100 | 11.3300 | 6.6370 |
| 204 | 2584.0000 | 1.1832 | .1310 | 12.0800 | 12.0800 | .3000 | 1.4366 | 1.4326 | 6.5400 | 11.3000 | 6.6270 |
| 204 | 2585.0000 | 1.1856 | .1310 | 6.5900 | 6.5900 | .3190 | 1.4506 | 1.4536 | 6.5600 | 11.4000 | 6.6330 |
| 204 | 2586.0000 | 1.1806 | .1320 | 6.5900 | 6.5900 | .3140 | 1.4562 | 1.4536 | 6.2900 | 11.1000 | 6.6330 |
| 204 | 2587.0000 | 1.1856 | .1300 | 6.5900 | 6.5900 | .3060 | 1.4586 | 1.4518 | 5.8400 | 10.7400 | 6.6350 |
| 204 | 2588.0000 | 1.1932 | .1350 | 6.5900 | 6.5900 | .3300 | 1.5096 | 1.4532 | 5.5900 | 10.4000 | 6.6120 |
| 204 | 2589.0000 | 1.1950 | .1370 | 6.5900 | 7.6820 | .3240 | 1.4616 | 1.4472 | 5.1100 | 9.9300 | 6.6120 |
| 204 | 2590.0000 | 1.2016 | .1390 | 12.0800 | 12.0800 | .3110 | 1.5250 | 1.4436 | 4.6200 | 9.4700 | 6.6400 |
| 204 | 2591.0000 | 1.2070 | .1420 | 6.0410 | 7.1390 | .3280 | 1.5178 | 1.4190 | 3.6400 | 8.6000 | 6.7800 |
| 204 | 2592.0000 | 1.2208 | .1560 | 10.4330 | 12.0800 | .3450 | 1.6230 | 1.4216 | 2.3400 | 6.5000 | 6.4400 |
| 204 | 2593.0000 | 1.2350 | .1700 | 10.9820 | 12.0800 | .3380 | 1.6322 | 1.4106 | 1.4600 | 5.3000 | 1.5800 |
| 204 | 2605.0000 | 1.2610 | .2090 | 10.9820 | 11.5310 | | | | | | |

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4. Pack 210A, 5-cells

a. Cell information: (Same as Pack 207A, Section V. C. 1.).

b. Parameters:

| | | | |
|--------------------------|-----|------------------------------|-----|
| Depth of Discharge (%) | 80 | Float/Trickle Current (amps) | .20 |
| Charge Control | AE | Auxiliary Electrode:* | |
| Charge Current (amps) | 3.0 | Resistance (ohms) | 300 |
| Discharge Current (amps) | 8.0 | Trip Voltage (mv) | 300 |
| Temperature (°C) | 20 | | |

*--Cells 1, 2 and 5.

c. Capacity checks: (Discharge to .50 volts any cell).

| | Cell
1 | Cell
2 | Cell
3 | Cell
4 | Cell
5 | ah
out |
|------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Shadow 5 (Figure 99) | .541 | .979 | .869 | .905 | .303 | 13.80 |
| Shadow 6 (Figure 100) | .635 | .989 | .902 | .876 | .161 | 13.46 |
| Shadow 7 (Figure 101) | .828 | .997 | .954 | .920 | .452 | 12.98 |
| Shadow 8 (Figure 102) | .946 | .996 | .980 | .952 | .499 | 13.36 |
| Shadow 9 (Figure 103) | .338 | 1.133 | 1.130 | 1.093 | 1.100 | 10.22 |
| Shadow 10 (Figure 104) | .263 | 1.193 | 1.193 | 1.190 | 1.185 | 6.02 |
| Shadow 11 | ** | .983 | .867 | .765 | -.080 | 11.80 |
| Shadow 12 (Figure 105) | | .512 | 1.005 | .975 | -.205 | 12.16 |
| Shadow 13 (Figure 106) | | .664 | 1.023 | .958 | .141 | 11.13 |
| Shadow 14 (Figure 107) | | .585 | .971 | .685 | .412 | 12.04 |

**--Cell 1 leaking, removed prior to shadow 11.

d. Test results during Eclipse Seasons: (Figures 108 to 115).

(1) Erratic data, shown during periods 9 and 10, is due to the "drying out" of cell 1. Its pressure assembly was bumped, during the sun period prior to shadow 9, which caused the weld at the base of the fill tube to break. This cell had low end of charge readings and unreliable pressure readings. The cell was removed from the pack prior to the start of shadow period 11.

(2) Average End of Discharge Voltages: The reconditioning effect, due to the capacity checks, can be seen for all the shadow periods except periods 9 and 10. The average voltage increased by 34 millivolts the day following the capacity check during period 14.

(3) Average Cell Voltages at Trip and End of Charge: During the first 7 periods, the voltages at trip were lower than those at the end of charge. During period 8, this condition began to reverse, and during the last 6 periods the voltages at trip were higher. High trip voltages at the beginning of each period appears to be due to the auxiliary electrodes becoming "desensitized" during the preceding sun period. This condition would last from 2 to 8 days except during the last 3 periods as the voltages at trip remained high throughout the periods. The end of charge voltages have been steadily increasing during the last 3 periods. During shadow 11, cell 2, began to exhibit a high end of charge voltage. This can be seen in the following paragraph, which lists the voltages at the beginning of each sun period.

e. Performance during Sun Periods: The pack began test with a shadow period and has now completed 14 sun periods. The pressures, cell 1, never exceeded 15 psia during any sun period prior to period 8 when its pressure assemble began leaking. Following is a listing of the high, average and low cell voltages at the start and end of sun periods 5 through 14.

| Sun Periods | | | | | | | | | |
|-------------|----------|----------|----------|----------|----------|----------|----------|----------|--|
| 5 | | | 6 | | 7 | | 8 | | |
| Voltages*** | Start | End | Start | End | Start | End | Start | End | |
| High | 1.414(3) | 1.402(4) | 1.403(3) | 1.400(4) | 1.409(3) | 1.399(4) | 1.415(2) | 1.402(4) | |
| Average | 1.412 | 1.397 | 1.400 | 1.394 | 1.407 | 1.390 | 1.408 | 1.387 | |
| Low | 1.411(1) | 1.393(3) | 1.397(5) | 1.387(3) | 1.405(5) | 1.380(2) | 1.407(1) | 1.371(2) | |
| 9 | | | 10 | | 11 | | 12 | | |
| Voltages | Start | End | Start | End | Start | End | Start | End | |
| High | 1.428(2) | 1.380(3) | 1.415(2) | 1.461(4) | 1.536(2) | 1.393(4) | 1.544(2) | 1.366(4) | |
| Average | 1.409 | 1.373 | 1.407 | 1.435 | 1.461 | 1.380 | 1.469 | 1.358 | |
| Low | 1.394(1) | 1.362(2) | 1.400(1) | 1.412(3) | 1.415(3) | 1.371(2) | 1.424(3) | 1.339(2) | |
| 13 | | | 14 | | | | | | |
| Voltages | Start | End | Start | End | | | | | |
| High | 1.536(2) | 1.375(4) | 1.583(5) | 1.399(4) | | | | | |
| Average | 1.465 | 1.366 | 1.526 | 1.389 | | | | | |
| Low | 1.409(3) | 1.358(2) | 1.423(3) | 1.381(3) | | | | | |

***--() Indicates which cell.

f. Cell Analysis: Cell 1 was sent to GSFC for analysis.

KEY
 * HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 210A
 SHADOW PERIOD IS 5
 CYCLE NUMBER IS 750.
 DISCHARGE RATE IS 8.0

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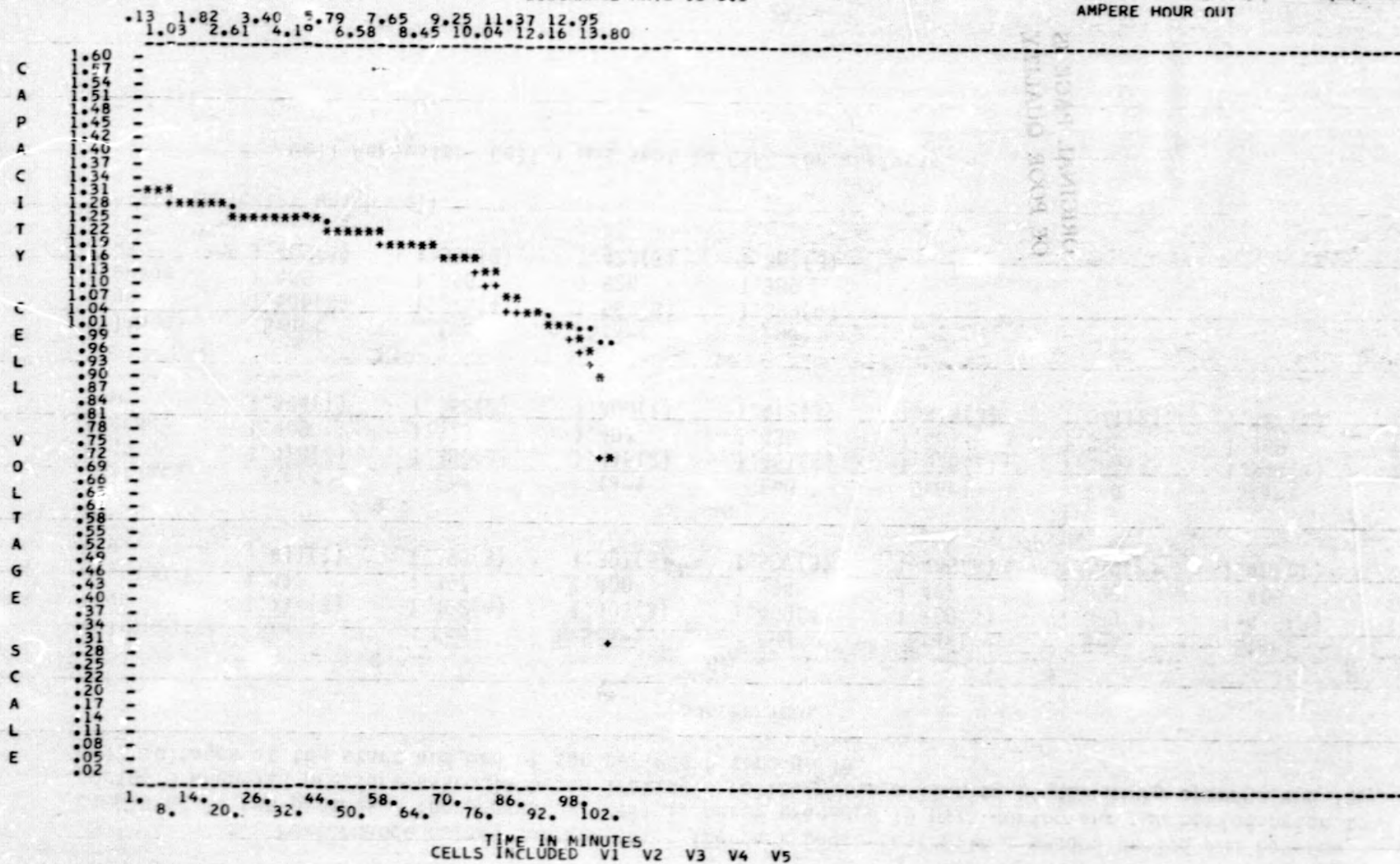


FIGURE 99

PAGE NUMBER IS 2104
SHADOW PERIOD IS 6
CYCLE NUMBER IS 932
DISCHARGE RATE IS 8.0

AMPERE HOUR OUT

1.08 1.84 2.64 3.46 5.09 7.01 8.05 10.25 11.07 13.46
1.08 2.64 4.27 5.91 7.83 9.45 11.05 13.21

KEY
* HIGH CELL
* LOW CELL
* AVERAGE

C
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V
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S
C
A
L
E

ORIGINAL PAGE IS
OF POOR QUALITY

1. 14. 26. 32. 44. 52. 58. 64. 70. 76. 82. 88. 98. 100.

CELLS INCLUDED IN MINUTES
V2 V3 V4 V5

FIGURE 100

KEY
 * HIGH CELL
 * LOW CELL
 * AVERAGE

PACK NUMBER IS 210A
 SHADOW PERIOD IS 7
 CYCLE NUMBER IS 1114.
 DISCHARGE RATE IS 8.

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AMPERE HOUR OUT

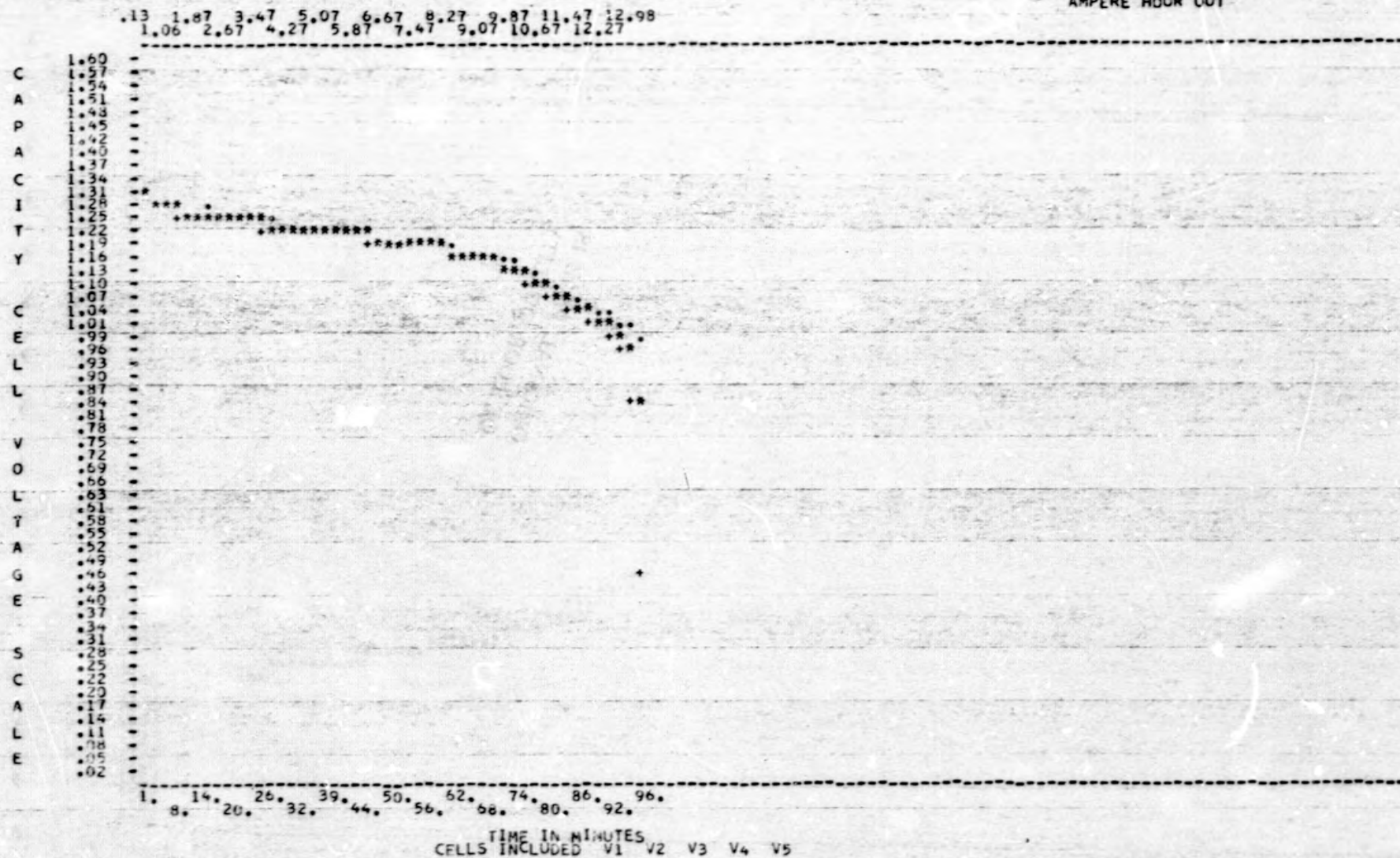


FIGURE 101

KEY: HIGH CELL
+ LOW CELL
* AVERAGE

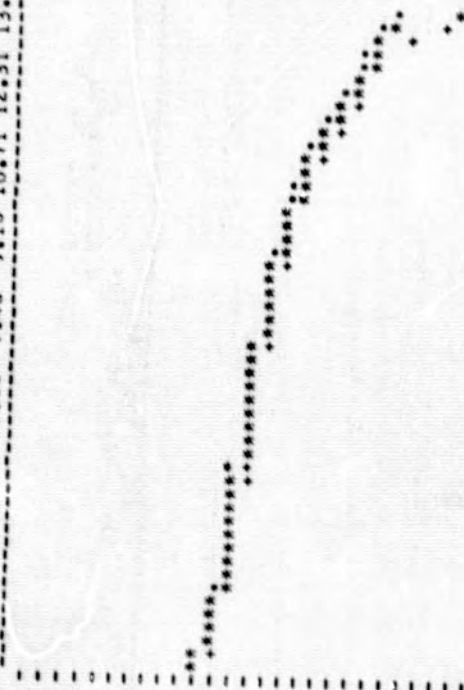
PACK NUMBER IS 210A
SHADE NUMBER IS 8
CYCLE NUMBER IS 1296
DISCHARGE RATE IS 8.0

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AMPERE HOUR OUT

1. 0.3 1.35 3.47 5.08 6.68 8.29 9.44 11.51 13.10
2. 0.3 2.66 4.25 5.88 7.48 9.10 10.71 12.31 13.36

C A P A C I T Y C E L L V O L T A G E S C A L E



ORIGINAL PAGE IS
OF POOR QUALITY

TIME IN MINUTES
CELLS INCLUDED VI V2 V3 V4 V5

1. 8. 14. 20. 26. 32. 38. 44. 50. 56. 62. 68. 74. 80. 86. 92. 100.

FIGURE 102

KEY
 * HIGH CELL
 * LOW CELL
 * AVERAGE

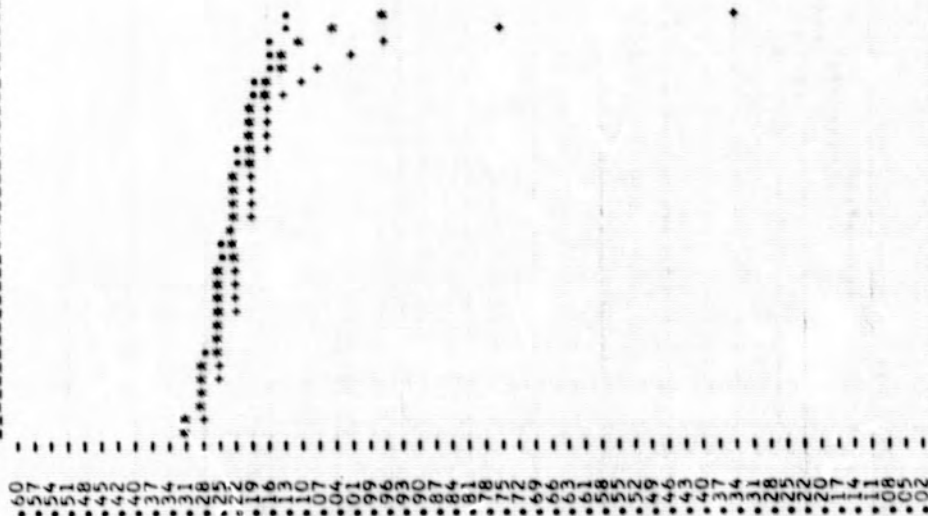
PACK NUMBER IS 210A
 SHADOW PERIOD IS 9
 CYCLE NUMBER IS 1477
 DISCHARGE RATE IS 8.0

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AMPERE HOUR OUT

32 2.23 4.15 6.06 7.98 9.89
 1.26 3.19 5.11 7.02 8.94 10.22

C A P A C I T Y C E L L V O L T A G E S C A L E



1. 9. 16. 23. 30. 34. 45. 52. 59. 66. 73. 76.

TIME IN MINUTES
 CELLS INCLUDED A2 V1 V2 V3 V4 V5

FIGURE 103

KEY:
 * HIGH CELL
 + LOW CELL
 * AVERAGE

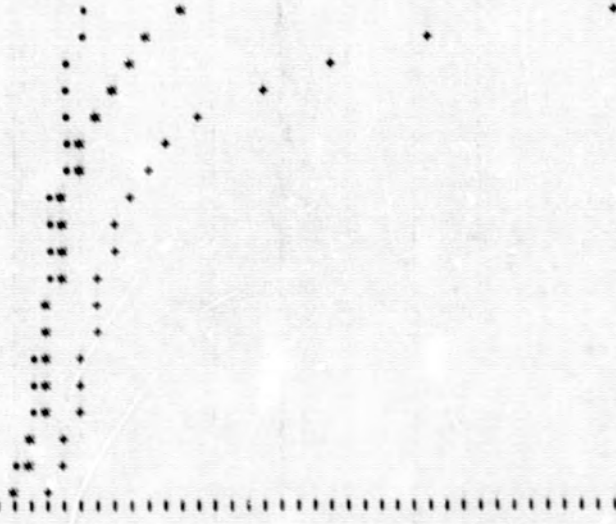
PACK NUMBER 15 210A
 CYCLE NUMBER 15 1635
 DISCHARGE RATE 15 0.0

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AMPERE HOUR UNIT

32 1.7 2.22 3.17 4.12 5.07 6.02
 .63 1.59 2.54 3.48 4.44 5.39
 .95 1.90 2.85 3.80 4.75 5.71

C A P A C I T Y C E L L V O L T A G E S C A L E



1. 4. 7. 9. 12. 16. 23. 31. 38. 45.
 2. 5. 8. 11. 14. 17. 20. 23. 26. 28. 31. 33. 36. 38. 40. 43.

TIME IN MINUTES
 CELLS INCLUDED A2 V1 V2 V3 V4 V5

ORIGINAL PAGE IS
 OF POOR QUALITY

FIGURE 104

KEY
 * HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 210A
 SHADOW PERIOD IS 12
 CYCLE NUMBER IS 2123.
 DISCHARGE RATE IS 8.0

WQEC/C 77-134

AMPERE HOUR OUT

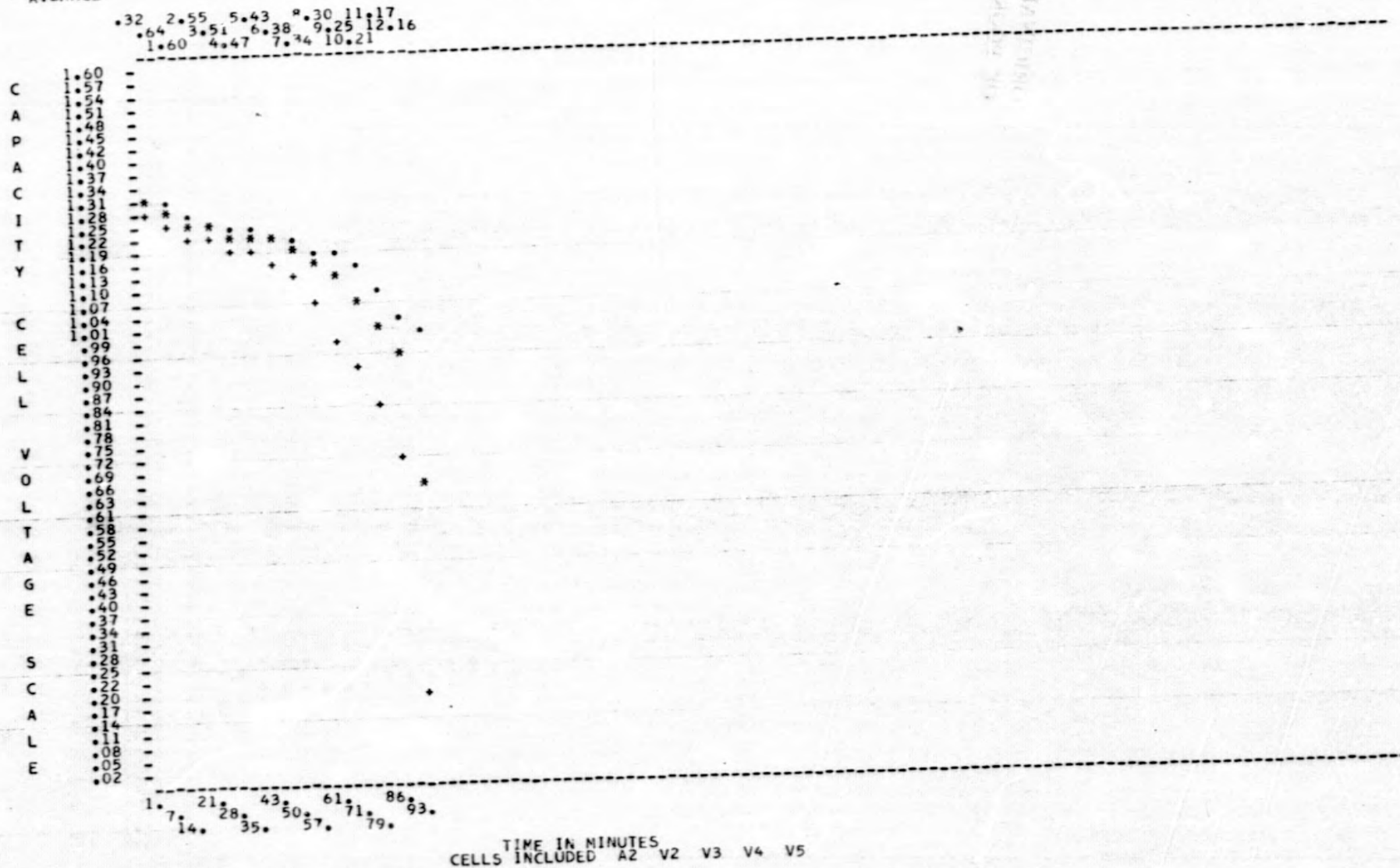


FIGURE 105

KEY HIGH CELL
 * LOW CELL
 + AVERAGE

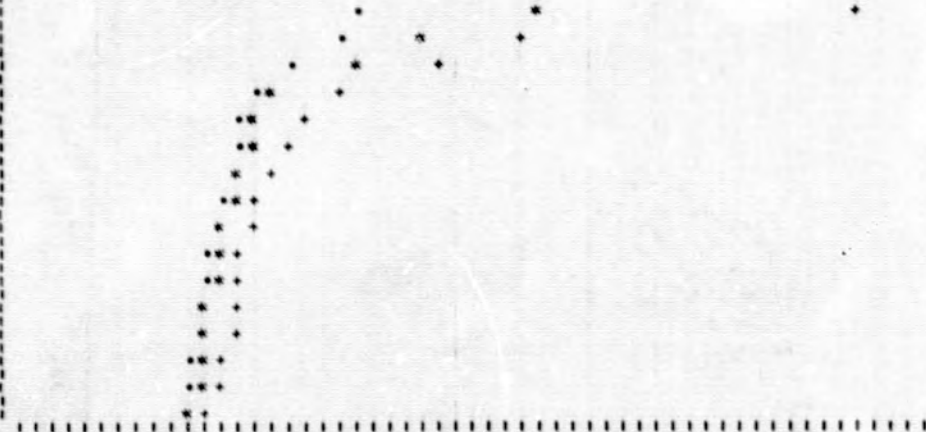
PACK NUMBER IS 210A
 SWACH NUMBER IS 1312
 CYCLE NUMBER IS 12402
 DISCHARGE RATE IS 8.0

MOFC/C 77-134

AMPERE HOUR OUT

31 1.27 2.22 .09 7.95 11.13
 .63 1.59 3.18 6.04 8.90
 .95 1.90 4.13 6.99 10.81

C A P A C I T Y C E L L V O L T A G E S C A L E



1. 4. 6. 8. 11. 13. 16. 23. 30. 37. 44. 52. 59. 66. 81. 84.

TIME IN MINUTES
 CELLS INCLUDED V2 V3 V4 V5

ORIGINAL PAGE IS
 OF POOR QUALITY

FIGURE 106

KEY
 * HIGH CELL
 + LOW CELL
 * AVERAGE

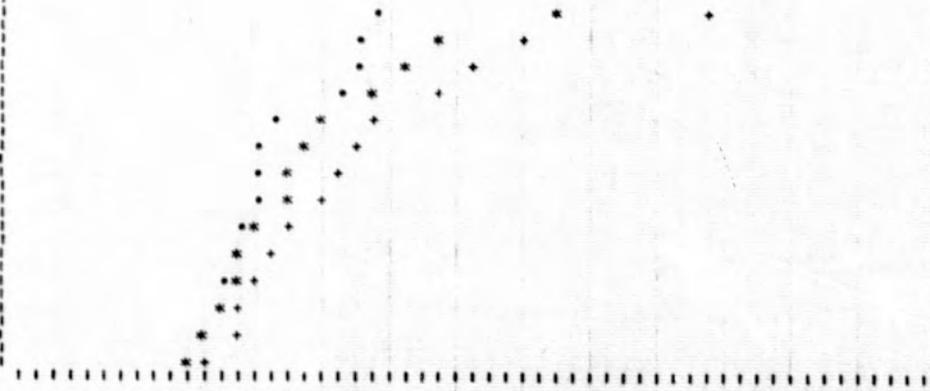
32 3.83 7.64 8.89 11.40
 1.27 5.10 7.95 10.15 12.04
 2.55 6.38 8.55 10.77

PACK NUMBER IS 210A
 SHADOW PERIOD IS 14
 CYCLE NUMBER IS 2584
 DISCHARGE RATE IS 8.0

WQEC/C 77-134

AMPERE HOUR OUT

C A P A C I T Y C E L L V O L T A G E S C A L E



1.9 28.57 66.85 90.
 18. 47. 61. 81.

TIME IN MINUTES
 CELLS INCLUDED V2 V3 V4 V5

FIGURE 107

KEY
 * AVE END DISCHARGE VOLTAGE
 + AVE CELL VOLTAGE AT TRIP
 A AVE CELL VOLTAGE AT EOC
 B AVE AUX-ELECT. VOLT. AT EOD
 X AVE AUX-ELECT. VOLT. AT TRIP
 Y PRESSURE TRANS. AT FOD
 Y PRESSURE TRANS. AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 210A

DEPTH DISCHARGE 80
 TEMPERATURE 20 WQEC/C 77-134
 AMPERE RATE 12
 CATALOG 42B012AB
 SERIAL 9-5,9-7,10-8,10-9,9-14
 GENERAL ELECTRIC CELLS
 PROJECT AT5 F/G (Prototype)

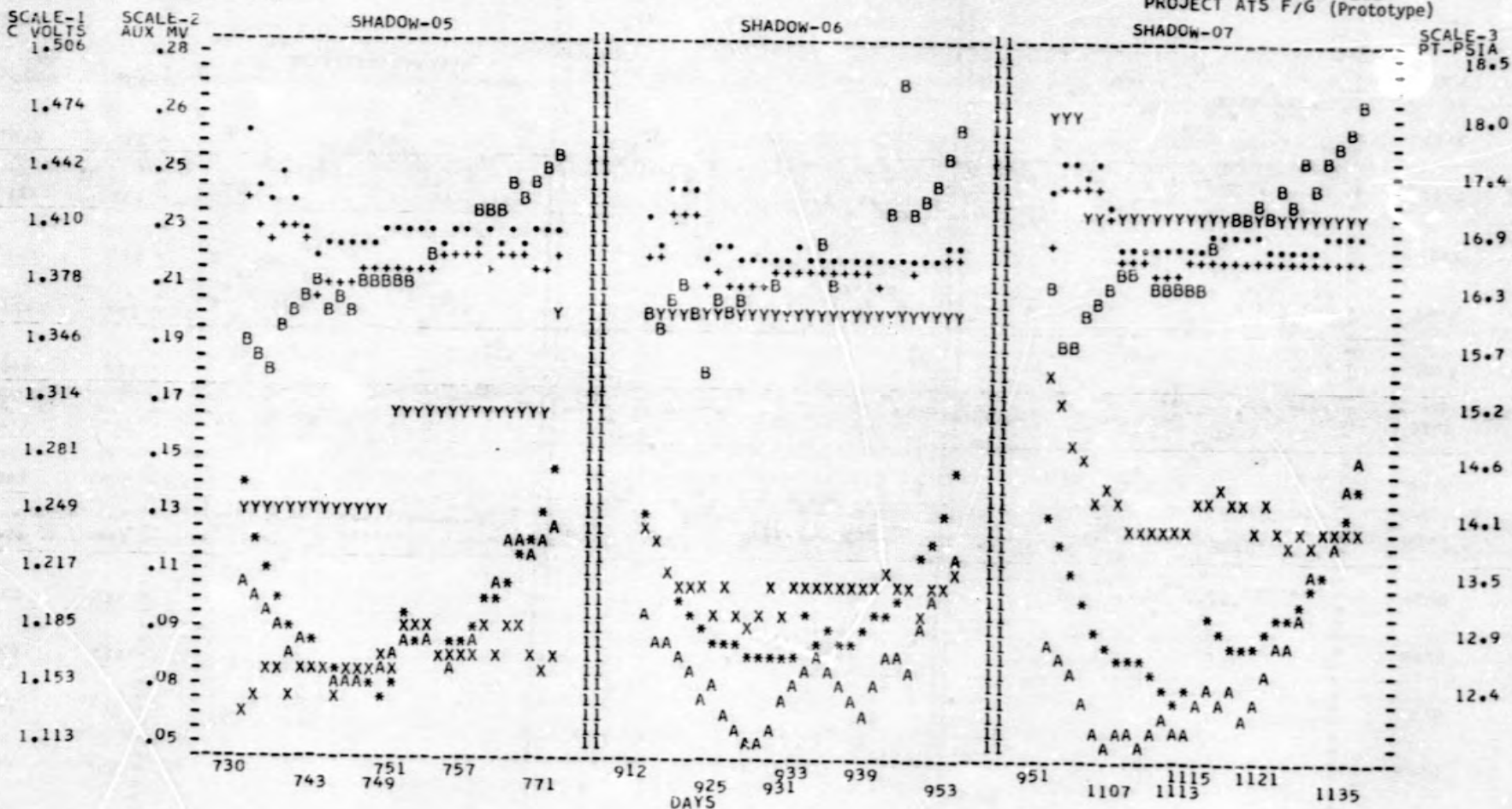


FIGURE 108

ORIGINAL PAGE IS
 OF POOR QUALITY

KEY
 * AVE END DISCHARGE VOLTAGE
 + AVE CELL VOLTAGE AT TRIP
 A AVE CELL VOLTAGE AT EOC
 A AVE AUX-ELECT. VOLT. AT EOD
 B AVE AUX-ELECT. VOLT. AT TRIP
 X PRESSURE TRANS. AT EOD
 Y PRESSURE TRANS. AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 210A

DEPTH DISCHARGE 80
 TEMPERATURE 20 WQEC/C 77-134
 AMPERE RATE 12
 CATALOG 428012AB
 SERIAL 9-5-9-7-10-8-10-9-9-14
 GENERAL ELECTRIC CFLS
 PROJECT ATS F/G (Prototype)

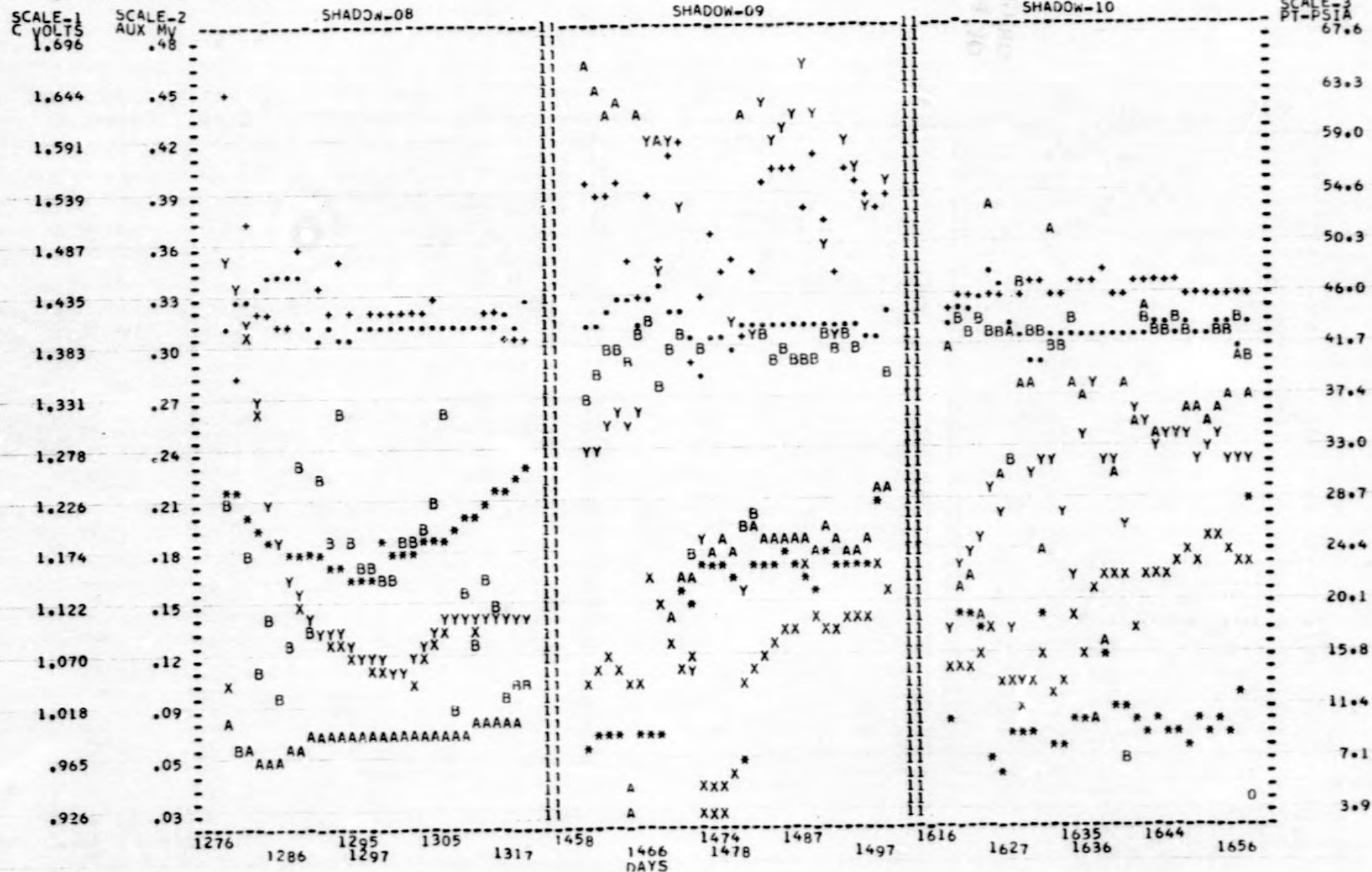


FIGURE 109

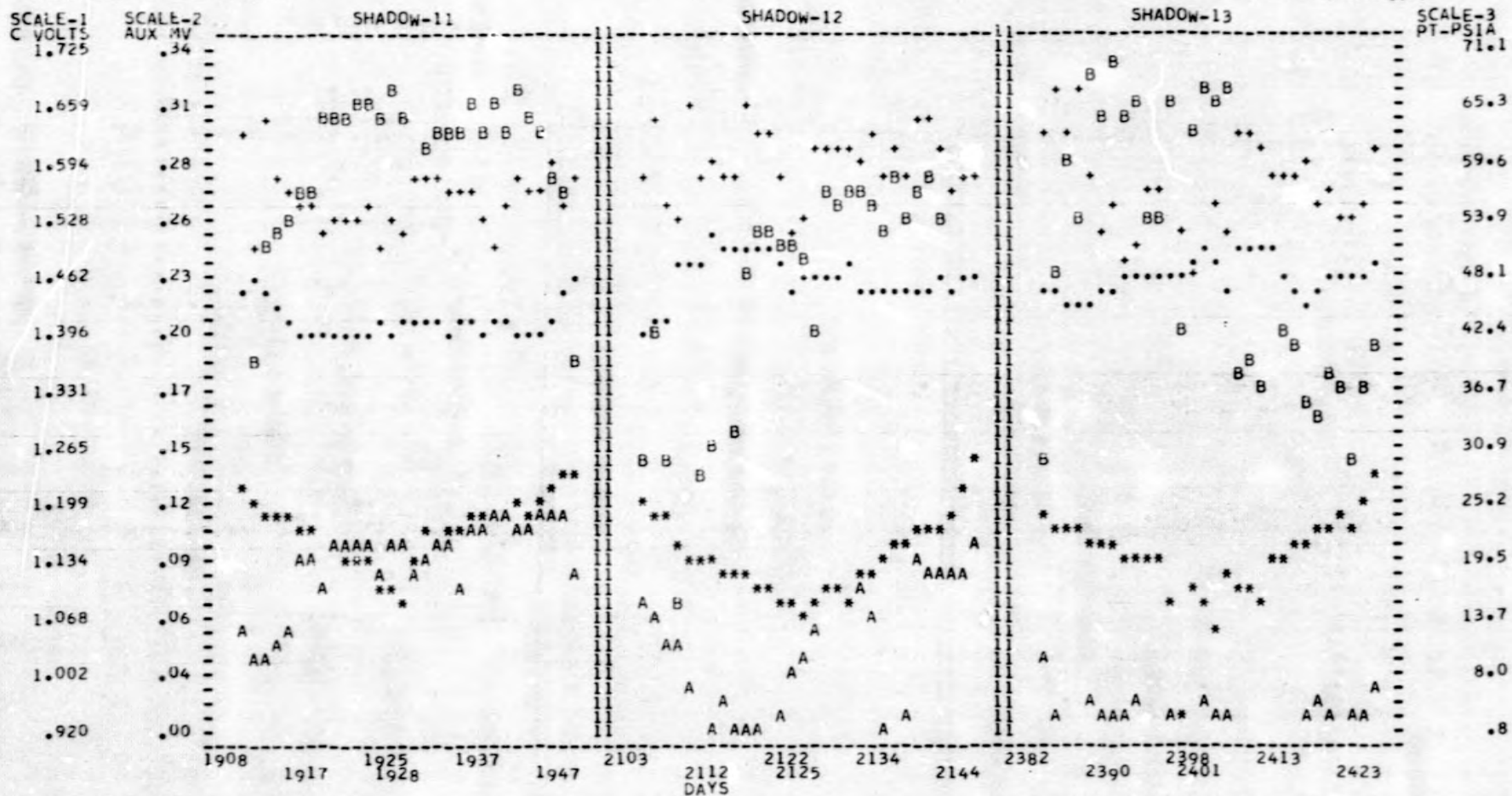
KEY
 * AVE END DISCHARGE VOLTAGE
 + AVE CELL VOLTAGE AT TRIP
 A AVE CELL VOLTAGE AT EOC
 B AVE AUX-ELECT. VOLT. AT EOD
 B AVE AUX-ELECT. VOLT. AT TRIP
 PRESSURE TRANS. AT EOD
 PRESSURE TRANS. AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 210A

DEPTH DISCHARGE 8C
 TEMPERATURE 20
 AMPERE RATE 12
 CATALOG #28012AB
 SERIAL 9-5,9-7,10-8,10-9,9-14
 GENERAL ELECTRIC CELLS
 PROJECT AT5 F/G (Prototype)

WQEC/C 77-134



NOTE: Cell 1 removed prior to Shadow 11.

FIGURE 110

ORIGINAL PAGE IS
 OF POOR QUALITY

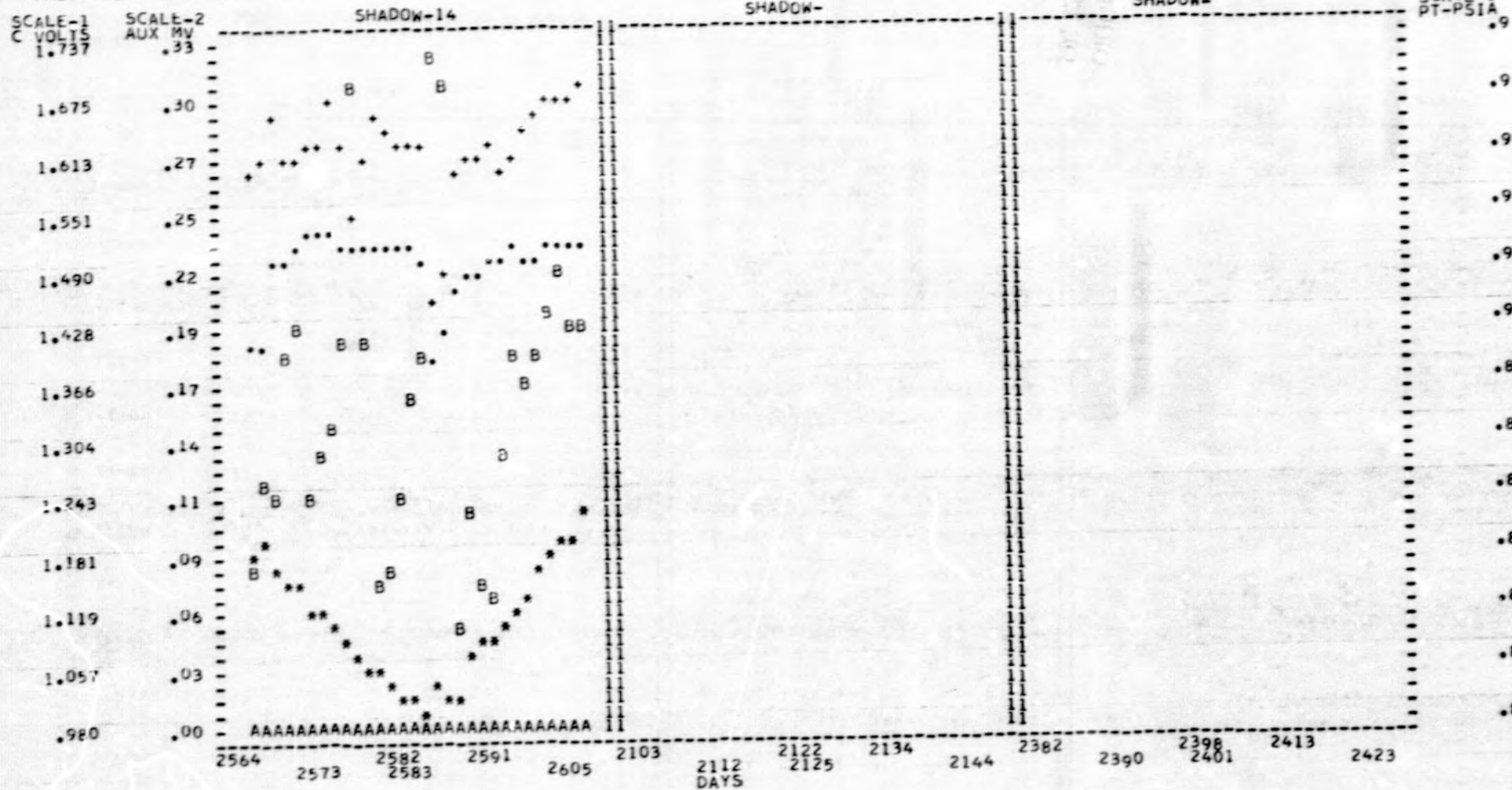
WQEC/C 77-134

KEY
 * AVE END DISCHARGE VOLTAGE
 * AVE CELL VOLTAGE AT TRIP
 * AVE CELL VOLTAGE AT EOC
 A AVE AUX-ELECT. VOLT. AT EOD
 B AVE AUX-ELECT. VOLT. AT TRIP
 PRESSURE TRANS. AT EOD
 PRESSURE TRANS. AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 210A

DEPTH DISCHARGE 80
 TEMPERATURE 20
 AMPERE RATE 12
 CATALOG 42B012AB
 SERIAL 9-5,9-7,10-8,10-9,9-14
 GENERAL ELECTRIC CELLS
 PROJECT AT5 F/G (Prototype)



NOTE: Cell 1 removed prior to Shadow 11.

FIGURE 111

KEY
 * AHO
 + AHI-TOTAL
 . AHI AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 210A

DEPTH DISCHARGE 80
 TEMPERATURE 20
 AMPERE RATE 12
 CATALOG 42B012AB
 SERIAL 9-5,9-7,10-8,10-9,9-14
 GENERAL ELECTRIC CELLS
 PROJECT ATS F/G (Prototype)

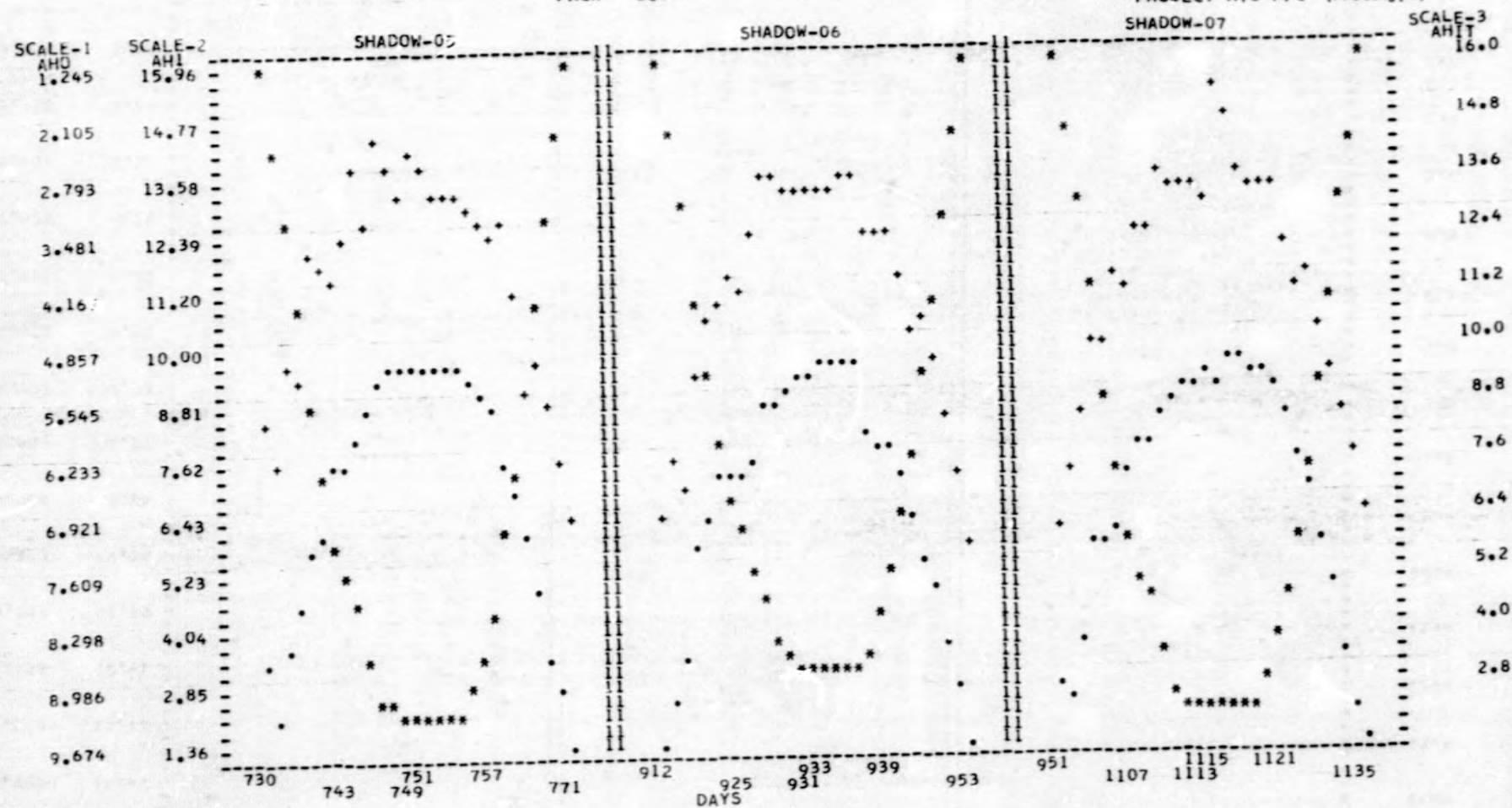


FIGURE 112

ORIGINAL PAGE IS
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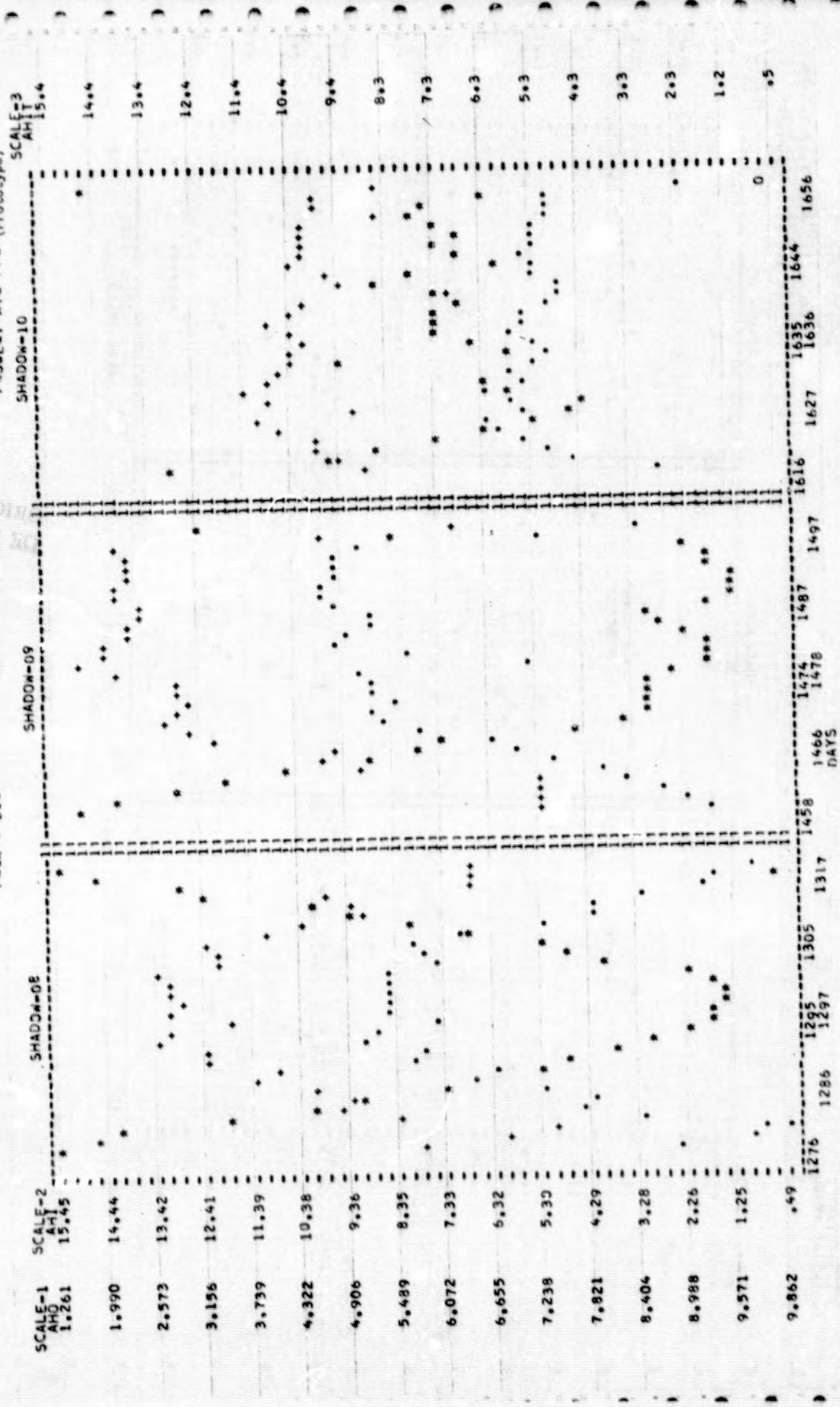
WQEC/C 77-134

DEPTH DISCHARGE 80
TEMPERATURE 20
WIND SPEED 12
CLOUD LOG 42801248
CLOUD LOG 95910-8.10-9.9-14
GENERAL ELECTRIC
PROJECT ATTS F/G (Prototype)

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 210A

KEY
* AHQ-TOTAL
* AHQ AT TRIP
* AKI AT TRIP

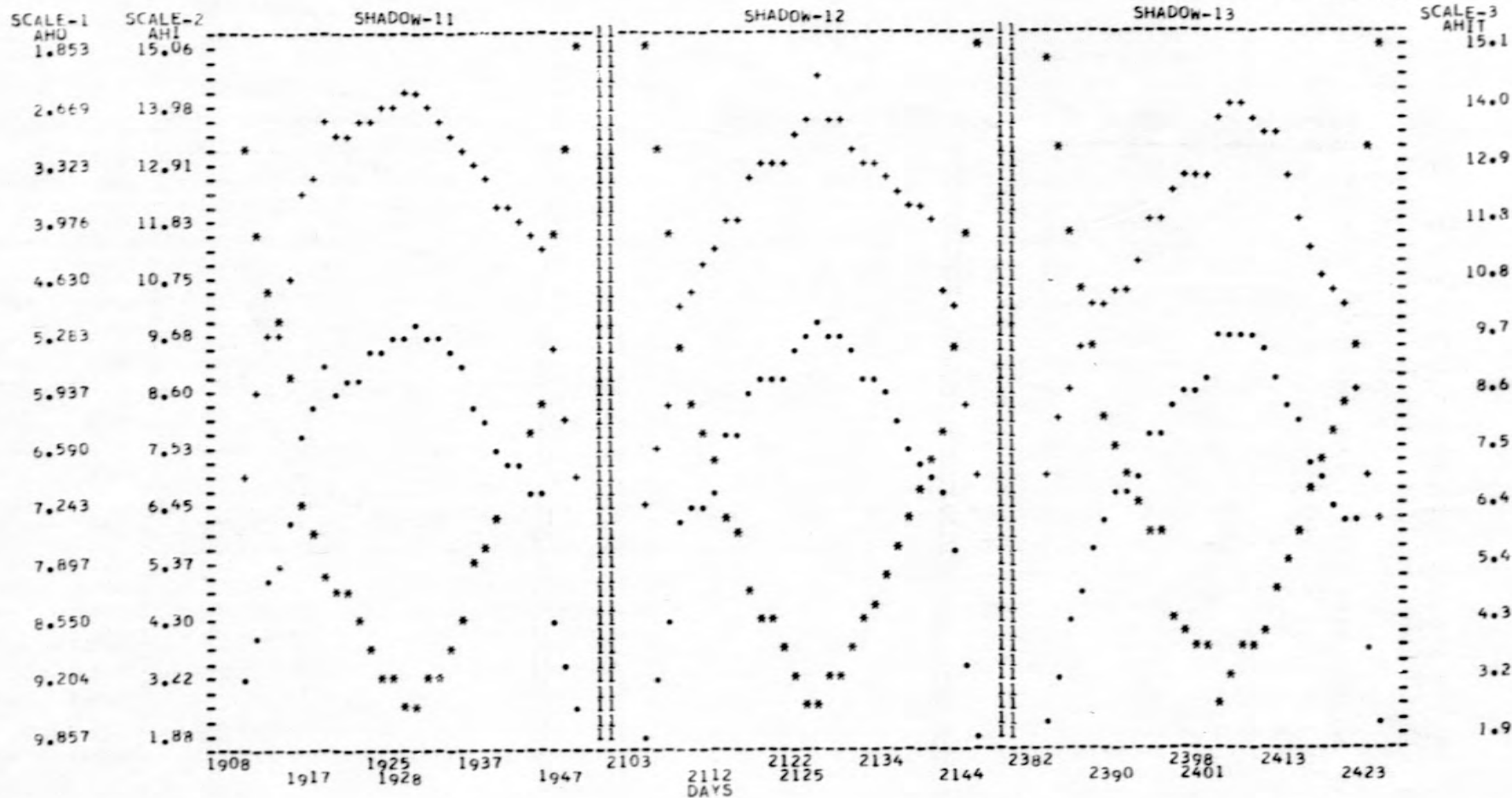


KEY
 * AHD
 * AHI-TOTAL
 * AHI AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 210A

WQEC/C 77-134
 DEPTH DISCHARGE 80
 TEMPERATURE 20
 AMPERE RATE 12
 CATALOG 42B012AB
 SERIAL 9-5,9-7,10-8,10-9,9-14
 GENERAL ELECTRIC CELLS
 PROJECT ATS F/G (Prototype)



NOTE: Cell 1 removed prior to Shadow 11.

FIGURE 114

ORIGINAL PAGE IS
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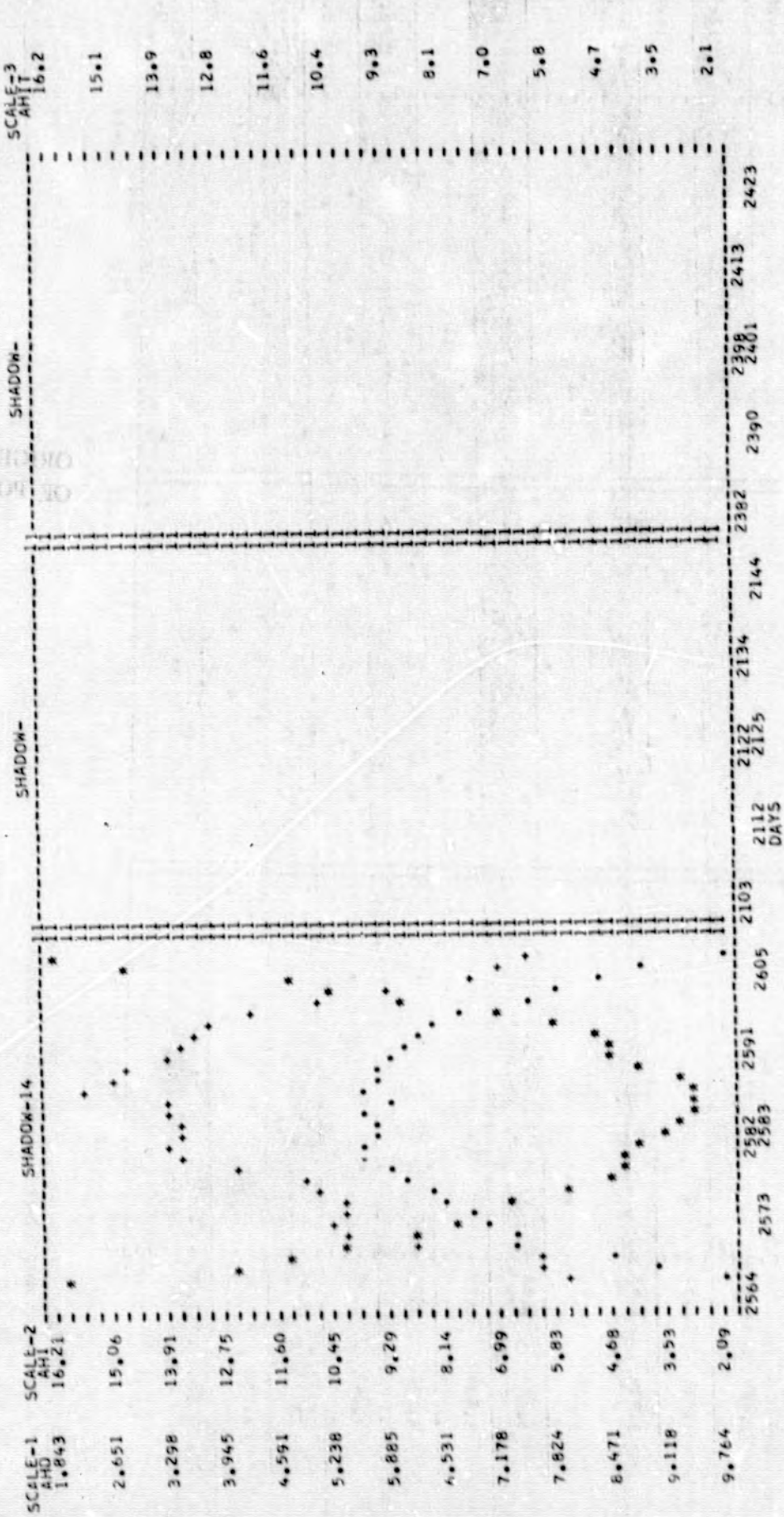
KEY
 * AHI - TOTAL
 * AHI AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 210A

DEPTH DISCHARGE 80
 TEMPERATURE 20
 AMPERE RATE 12
 CATALOG 428012AB
 SERIAL 9501710-8,10-9,9-14
 GENERAL ELECTRIC CELLS
 PROJECT ATS F7G (Prototype)

WQEC/C 77-134



NOTE: Cell 1 removed prior to Shadow 11

FIGURE 115

WÓJEC/Ś 77-134

PAGE 15 18.

932.

CYCLE IS

STANDARD DEFINITION IS A

100

A-107

HIGH-V

AVE • V

A-113J

Cell 1 - V

Cont. 1-11

1

2007

JOHN

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051.

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[illegible][illegible]

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840.

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[illegible]

NOTES

TE (F 10) is 10
T 1.95 1005

52

CELL-V

2104
CELL-0

CELL-4

CELL-V

060
A-777

AVE-V
1.295

1.297
A-HGI

445.
E62.
A-00

ORIGINAL PAGE IS
OF POOR QUALITY

DATE OF RUN IS 08/27/76

PACK NUMBER IS 210A

SHADOW PERIOD IS 8

CYCLE IS 1296.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|------|------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 1. | .121 | V1 | .312 | V2 | .316 | V3 | .317 | V4 | .312 | V5 | .314 | .317 |
| 4. | .501 | V1 | .291 | V2 | .296 | V3 | .297 | V4 | .295 | V5 | .294 | .291 |
| 6. | .767 | V1 | .282 | V2 | .287 | V3 | .285 | V4 | .285 | V5 | .286 | .282 |
| 8. | .035 | V1 | .275 | V2 | .280 | V3 | .281 | V4 | .279 | V5 | .281 | .275 |
| 10. | .306 | V1 | .275 | V2 | .274 | V3 | .276 | V4 | .272 | V5 | .279 | .270 |
| 12. | .578 | V1 | .265 | V2 | .269 | V3 | .271 | V4 | .268 | V5 | .273 | .265 |
| 14. | .851 | V1 | .265 | V2 | .264 | V3 | .267 | V4 | .262 | V5 | .268 | .260 |
| 16. | .126 | V1 | .255 | V2 | .260 | V3 | .262 | V4 | .259 | V5 | .263 | .256 |
| 18. | .397 | V1 | .255 | V2 | .258 | V3 | .259 | V4 | .257 | V5 | .259 | .253 |
| 20. | .664 | V1 | .255 | V2 | .255 | V3 | .256 | V4 | .254 | V5 | .257 | .250 |
| 22. | .932 | V1 | .244 | V2 | .250 | V3 | .250 | V4 | .249 | V5 | .250 | .246 |
| 24. | .200 | V1 | .244 | V2 | .247 | V3 | .250 | V4 | .245 | V5 | .247 | .244 |
| 26. | .469 | V1 | .244 | V2 | .243 | V3 | .247 | V4 | .242 | V5 | .244 | .237 |
| 28. | .739 | V1 | .233 | V2 | .241 | V3 | .242 | V4 | .239 | V5 | .240 | .233 |
| 30. | .009 | V1 | .233 | V2 | .238 | V3 | .240 | V4 | .237 | V5 | .237 | .231 |
| 32. | .277 | V1 | .231 | V2 | .235 | V3 | .238 | V4 | .235 | V5 | .237 | .231 |
| 34. | .543 | V1 | .229 | V2 | .233 | V3 | .234 | V4 | .231 | V5 | .231 | .229 |
| 36. | .809 | V1 | .225 | V2 | .229 | V3 | .231 | V4 | .229 | V5 | .229 | .225 |
| 38. | .076 | V1 | .225 | V2 | .226 | V3 | .226 | V4 | .226 | V5 | .226 | .222 |
| 40. | .343 | V1 | .219 | V2 | .223 | V3 | .222 | V4 | .223 | V5 | .223 | .219 |
| 42. | .610 | V1 | .217 | V2 | .220 | V3 | .220 | V4 | .220 | V5 | .220 | .216 |
| 44. | .878 | V1 | .217 | V2 | .216 | V3 | .217 | V4 | .217 | V5 | .217 | .212 |
| 46. | .145 | V1 | .209 | V2 | .212 | V3 | .216 | V4 | .213 | V5 | .212 | .209 |
| 48. | .413 | V1 | .209 | V2 | .207 | V3 | .212 | V4 | .209 | V5 | .209 | .206 |
| 50. | .681 | V1 | .201 | V2 | .202 | V3 | .205 | V4 | .205 | V5 | .205 | .201 |
| 52. | .949 | V1 | .201 | V2 | .202 | V3 | .205 | V4 | .201 | V5 | .202 | .199 |
| 54. | .217 | V1 | .194 | V2 | .199 | V3 | .200 | V4 | .197 | V5 | .197 | .194 |
| 56. | .485 | V1 | .189 | V2 | .195 | V3 | .198 | V4 | .197 | V5 | .198 | .189 |
| 58. | .754 | V1 | .184 | V2 | .190 | V3 | .192 | V4 | .193 | V5 | .193 | .184 |
| 60. | .023 | V1 | .184 | V2 | .186 | V3 | .188 | V4 | .188 | V5 | .188 | .180 |
| 62. | .293 | V1 | .177 | V2 | .181 | V3 | .183 | V4 | .182 | V5 | .184 | .175 |
| 64. | .562 | V1 | .170 | V2 | .175 | V3 | .179 | V4 | .177 | V5 | .179 | .170 |
| 66. | .832 | V1 | .164 | V2 | .170 | V3 | .171 | V4 | .171 | V5 | .173 | .164 |
| 68. | .101 | V1 | .157 | V2 | .165 | V3 | .166 | V4 | .164 | V5 | .167 | .157 |
| 70. | .369 | V1 | .152 | V2 | .159 | V3 | .159 | V4 | .157 | V5 | .161 | .148 |
| 72. | .638 | V1 | .144 | V2 | .152 | V3 | .154 | V4 | .149 | V5 | .153 | .137 |
| 74. | .907 | V1 | .134 | V2 | .141 | V3 | .146 | V4 | .137 | V5 | .144 | .121 |
| 76. | .173 | V1 | .124 | V2 | .133 | V3 | .136 | V4 | .126 | V5 | .135 | .105 |
| 78. | .441 | V1 | .114 | V2 | .123 | V3 | .121 | V4 | .111 | V5 | .123 | .091 |
| 80. | .708 | V1 | .101 | V2 | .113 | V3 | .102 | V4 | .091 | V5 | .109 | .078 |
| 82. | .975 | V1 | .089 | V2 | .103 | V3 | .087 | V4 | .078 | V5 | .093 | .066 |
| 84. | .242 | V1 | .073 | V2 | .089 | V3 | .076 | V4 | .066 | V5 | .080 | .053 |
| 86. | .508 | V1 | .059 | V2 | .076 | V3 | .059 | V4 | .053 | V5 | .066 | .042 |
| 88. | .774 | V1 | .045 | V2 | .063 | V3 | .044 | V4 | .042 | V5 | .053 | .030 |
| 90. | .040 | V1 | .037 | V2 | .051 | V3 | .033 | V4 | .030 | V5 | .041 | .017 |
| 92. | .306 | V1 | .019 | V2 | .030 | V3 | .014 | V4 | .016 | V5 | .029 | .001 |
| 94. | .571 | V1 | .005 | V2 | .019 | V3 | .001 | V4 | .003 | V5 | .018 | .970 |
| 96. | .836 | V1 | .985 | V2 | .009 | V3 | .980 | V4 | .986 | V5 | .976 | .898 |
| 98. | .101 | V1 | .945 | V2 | .996 | V3 | .980 | V4 | .952 | V5 | .875 | .499 |
| 100. | .365 | V1 | .945 | V2 | .996 | V3 | .980 | V4 | .952 | V5 | .875 | .499 |

DATE OF RUN IS 08/27 76

PACK NUMBER IS 210A

SHADOW PERIOD IS 9

CYCLE IS 1477.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HTGH-V | LOW-V | |
|------|------|--------|---------|----------|----------|----------|----------|--------|--------|-------|--------|-------|-------|
| 140. | .319 | AZ | .117 V1 | 1.301 V2 | 1.314 V3 | 1.313 V4 | 1.312 V5 | 1.311 | .000 | .000 | 1.310 | 1.314 | 1.301 |
| 143. | .638 | AZ | .117 V1 | 1.284 V2 | 1.291 V3 | 1.299 V4 | 1.299 V5 | 1.298 | .000 | .000 | 1.296 | 1.301 | 1.284 |
| 145. | .957 | AZ | .109 V1 | 1.272 V2 | 1.284 V3 | 1.289 V4 | 1.289 V5 | 1.288 | .000 | .000 | 1.286 | 1.291 | 1.272 |
| 148. | .595 | AZ | .099 V1 | 1.264 V2 | 1.276 V3 | 1.282 V4 | 1.282 V5 | 1.281 | .000 | .000 | 1.279 | 1.284 | 1.264 |
| 150. | .914 | AZ | .087 V1 | 1.257 V2 | 1.271 V3 | 1.276 V4 | 1.276 V5 | 1.275 | .000 | .000 | 1.272 | 1.278 | 1.257 |
| 152. | .553 | AZ | .087 V1 | 1.250 V2 | 1.262 V3 | 1.266 V4 | 1.265 V5 | 1.264 | .000 | .000 | 1.262 | 1.267 | 1.250 |
| 157. | .872 | AZ | .077 V1 | 1.241 V2 | 1.254 V3 | 1.257 V4 | 1.257 V5 | 1.255 | .000 | .000 | 1.253 | 1.258 | 1.241 |
| 159. | .510 | AZ | .074 V1 | 1.236 V2 | 1.250 V3 | 1.253 V4 | 1.253 V5 | 1.251 | .000 | .000 | 1.248 | 1.254 | 1.236 |
| 160. | .830 | AZ | .071 V1 | 1.231 V2 | 1.246 V3 | 1.249 V4 | 1.249 V5 | 1.247 | .000 | .000 | 1.244 | 1.250 | 1.231 |
| 164. | .191 | AZ | .069 V1 | 1.226 V2 | 1.246 V3 | 1.246 V4 | 1.245 V5 | 1.243 | .000 | .000 | 1.241 | 1.246 | 1.223 |
| 169. | .149 | AZ | .064 V1 | 1.223 V2 | 1.242 V3 | 1.242 V4 | 1.241 V5 | 1.239 | .000 | .000 | 1.236 | 1.242 | 1.218 |
| 172. | .468 | AZ | .064 V1 | 1.218 V2 | 1.239 V3 | 1.238 V4 | 1.238 V5 | 1.236 | .000 | .000 | 1.233 | 1.239 | 1.214 |
| 175. | .789 | AZ | .064 V1 | 1.214 V2 | 1.235 V3 | 1.235 V4 | 1.234 V5 | 1.232 | .000 | .000 | 1.229 | 1.235 | 1.210 |
| 179. | .108 | AZ | .062 V1 | 1.210 V2 | 1.231 V3 | 1.231 V4 | 1.231 V5 | 1.228 | .000 | .000 | 1.225 | 1.231 | 1.206 |
| 182. | .427 | AZ | .059 V1 | 1.206 V2 | 1.228 V3 | 1.231 V4 | 1.227 V5 | 1.225 | .000 | .000 | 1.222 | 1.228 | 1.201 |
| 184. | .746 | AZ | .059 V1 | 1.201 V2 | 1.224 V3 | 1.227 V4 | 1.227 V5 | 1.221 | .000 | .000 | 1.218 | 1.224 | 1.196 |
| 186. | .384 | AZ | .054 V1 | 1.196 V2 | 1.224 V3 | 1.224 V4 | 1.223 V5 | 1.216 | .000 | .000 | 1.213 | 1.220 | 1.191 |
| 188. | .703 | AZ | .054 V1 | 1.191 V2 | 1.220 V3 | 1.220 V4 | 1.220 V5 | 1.212 | .000 | .000 | 1.209 | 1.216 | 1.186 |
| 193. | .022 | AZ | .054 V1 | 1.186 V2 | 1.216 V3 | 1.216 V4 | 1.215 V5 | 1.212 | .000 | .000 | 1.213 | 1.220 | 1.180 |
| 193. | .341 | AZ | .052 V1 | 1.180 V2 | 1.211 V3 | 1.211 V4 | 1.210 V5 | 1.207 | .000 | .000 | 1.204 | 1.211 | 1.174 |
| 193. | .662 | AZ | .051 V1 | 1.174 V2 | 1.207 V3 | 1.207 V4 | 1.205 V5 | 1.202 | .000 | .000 | 1.204 | 1.207 | 1.167 |
| 193. | .981 | AZ | .049 V1 | 1.167 V2 | 1.202 V3 | 1.202 V4 | 1.200 V5 | 1.197 | .000 | .000 | 1.199 | 1.207 | 1.158 |
| 194. | .300 | AZ | .047 V1 | 1.158 V2 | 1.196 V3 | 1.196 V4 | 1.194 V5 | 1.191 | .000 | .000 | 1.194 | 1.202 | 1.147 |
| 194. | .619 | AZ | .047 V1 | 1.147 V2 | 1.191 V3 | 1.191 V4 | 1.188 V5 | 1.184 | .000 | .000 | 1.187 | 1.191 | 1.130 |
| 194. | .938 | AZ | .044 V1 | 1.130 V2 | 1.178 V3 | 1.178 V4 | 1.173 V5 | 1.164 | .000 | .000 | 1.161 | 1.178 | 1.105 |
| 194. | .257 | AZ | .044 V1 | 1.105 V2 | 1.164 V3 | 1.164 V4 | 1.164 V5 | 1.160 | .000 | .000 | 1.146 | 1.171 | 1.066 |
| 194. | .576 | AZ | .044 V1 | 1.066 V2 | 1.171 V3 | 1.171 V4 | 1.164 V5 | 1.149 | .000 | .000 | 1.129 | 1.164 | 1.018 |
| 194. | .895 | AZ | .044 V1 | 1.018 V2 | 1.155 V3 | 1.155 V4 | 1.151 V5 | 1.135 | .000 | .000 | 1.109 | 1.155 | .968 |
| 195. | .216 | AZ | .044 V1 | .968 V2 | 1.146 V3 | 1.146 V4 | 1.130 V5 | 1.118 | .000 | .000 | 1.057 | 1.146 | .765 |
| 195. | | AZ | .047 V1 | .765 V2 | 1.133 V3 | 1.133 V4 | 1.110 V5 | 1.100 | .000 | .000 | .959 | 1.133 | .338 |

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OF POOR QUALITY

DATE OF RUN IS 09/10/76

PACK NUMBER IS 210A

SHADOW PERIOD IS 10

CYCLE IS 1635.

WQEC/C 77-134
PAGE IS 27.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V | |
|-------|-------|--------|---------|----------|----------|----------|----------|--------|--------|-------|--------|-------|-------|
| 1115. | .318 | A2 | .181 V1 | 1.246 V2 | 1.312 V3 | 1.310 V4 | 1.310 V5 | 1.310 | .000 | .000 | 1.298 | 1.312 | 1.246 |
| 1118. | .635 | A2 | .174 V1 | 1.223 V2 | 1.297 V3 | 1.296 V4 | 1.296 V5 | 1.295 | .000 | .000 | 1.281 | 1.297 | 1.223 |
| 1121. | .952 | A2 | .163 V1 | 1.209 V2 | 1.286 V3 | 1.285 V4 | 1.285 V5 | 1.284 | .000 | .000 | 1.270 | 1.286 | 1.209 |
| 1123. | 1.269 | A2 | .157 V1 | 1.199 V2 | 1.278 V3 | 1.278 V4 | 1.277 V5 | 1.276 | .000 | .000 | 1.262 | 1.278 | 1.199 |
| 1125. | 1.586 | A2 | .147 V1 | 1.189 V2 | 1.271 V3 | 1.271 V4 | 1.271 V5 | 1.269 | .000 | .000 | 1.254 | 1.271 | 1.189 |
| 1128. | 1.903 | A2 | .135 V1 | 1.180 V2 | 1.265 V3 | 1.266 V4 | 1.265 V5 | 1.263 | .000 | .000 | 1.248 | 1.266 | 1.180 |
| 1130. | 2.220 | A2 | .124 V1 | 1.171 V2 | 1.260 V3 | 1.260 V4 | 1.260 V5 | 1.258 | .000 | .000 | 1.242 | 1.260 | 1.171 |
| 1133. | 2.537 | A2 | .124 V1 | 1.161 V2 | 1.255 V3 | 1.255 V4 | 1.254 V5 | 1.252 | .000 | .000 | 1.235 | 1.255 | 1.161 |
| 1135. | 2.854 | A2 | .122 V1 | 1.151 V2 | 1.250 V3 | 1.251 V4 | 1.250 V5 | 1.247 | .000 | .000 | 1.230 | 1.251 | 1.151 |
| 1137. | 3.171 | A2 | .114 V1 | 1.139 V2 | 1.245 V3 | 1.246 V4 | 1.245 V5 | 1.242 | .000 | .000 | 1.223 | 1.246 | 1.139 |
| 1140. | 3.483 | A2 | .113 V1 | 1.126 V2 | 1.240 V3 | 1.241 V4 | 1.240 V5 | 1.237 | .000 | .000 | 1.217 | 1.241 | 1.126 |
| 1142. | 3.800 | A2 | .113 V1 | 1.108 V2 | 1.235 V3 | 1.236 V4 | 1.235 V5 | 1.232 | .000 | .000 | 1.209 | 1.236 | 1.108 |
| 1145. | 4.118 | A2 | .108 V1 | 1.083 V2 | 1.230 V3 | 1.231 V4 | 1.230 V5 | 1.227 | .000 | .000 | 1.200 | 1.231 | 1.083 |
| 1147. | 4.436 | A2 | .104 V1 | 1.048 V2 | 1.225 V3 | 1.226 V4 | 1.224 V5 | 1.221 | .000 | .000 | 1.189 | 1.226 | 1.048 |
| 1149. | 4.754 | A2 | .104 V1 | .994 V2 | 1.220 V3 | 1.220 V4 | 1.218 V5 | 1.215 | .000 | .000 | 1.173 | 1.220 | .994 |
| 1152. | 5.072 | A2 | .103 V1 | .882 V2 | 1.214 V3 | 1.214 V4 | 1.212 V5 | 1.209 | .000 | .000 | 1.146 | 1.214 | .882 |
| 1154. | 5.389 | A2 | .101 V1 | .752 V2 | 1.207 V3 | 1.208 V4 | 1.205 V5 | 1.202 | .000 | .000 | 1.115 | 1.208 | .752 |
| 1157. | 5.707 | A2 | .101 V1 | .573 V2 | 1.200 V3 | 1.200 V4 | 1.198 V5 | 1.194 | .000 | .000 | 1.073 | 1.200 | .573 |
| 1159. | 6.024 | A2 | .099 V1 | .263 V2 | 1.193 V3 | 1.193 V4 | 1.190 V5 | 1.185 | .000 | .000 | 1.005 | 1.193 | .263 |

DATE OF RUN IS 09/10/76

PACK NUMBER IS 210A

SHADOW PERIOD IS 12

CYCLE IS 2123.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|-------|--------|--------|---------|----------|----------|----------|--------|--------|-------|--------|-------|
| 945. | .321 | A2 | .002 V2 | 1.274 V3 | 1.312 V4 | 1.311 V5 | 1.313 | .000 | 1.302 | 1.313 | 1.274 |
| 951. | .641 | A2 | .004 V2 | 1.251 V3 | 1.298 V4 | 1.297 V5 | 1.299 | .000 | 1.286 | 1.299 | 1.251 |
| 958. | 1.598 | A2 | .002 V2 | 1.226 V3 | 1.275 V4 | 1.274 V5 | 1.275 | .000 | 1.262 | 1.275 | 1.226 |
| 1005. | 2.555 | A2 | .004 V2 | 1.212 V3 | 1.260 V4 | 1.258 V5 | 1.259 | .000 | 1.247 | 1.260 | 1.212 |
| 1012. | 3.512 | A2 | .003 V2 | 1.197 V3 | 1.247 V4 | 1.245 V5 | 1.245 | .000 | 1.234 | 1.247 | 1.197 |
| 1019. | 4.469 | A2 | .001 V2 | 1.181 V3 | 1.236 V4 | 1.234 V5 | 1.234 | .000 | 1.221 | 1.236 | 1.181 |
| 1027. | 5.426 | A2 | .001 V2 | 1.158 V3 | 1.225 V4 | 1.222 V5 | 1.222 | .000 | 1.207 | 1.225 | 1.158 |
| 1034. | 6.383 | A2 | .001 V2 | 1.119 V3 | 1.212 V4 | 1.209 V5 | 1.209 | .000 | 1.187 | 1.212 | 1.119 |
| 1041. | 7.340 | A2 | .003 V2 | 1.064 V3 | 1.198 V4 | 1.193 V5 | 1.193 | .000 | 1.162 | 1.198 | 1.064 |
| 1045. | 8.297 | A2 | .005 V2 | .995 V3 | 1.179 V4 | 1.172 V5 | 1.170 | .000 | 1.129 | 1.172 | .995 |
| 1053. | 9.254 | A2 | .003 V2 | .921 V3 | 1.153 V4 | 1.127 V5 | 1.129 | .000 | 1.082 | 1.153 | .921 |
| 1103. | 10.211 | A2 | .003 V2 | .848 V3 | 1.098 V4 | 1.067 V5 | 1.061 | .000 | 1.018 | 1.098 | .848 |
| 1110. | 11.168 | A2 | .003 V2 | .731 V3 | 1.045 V4 | 1.025 V5 | .994 | .000 | .949 | 1.045 | .731 |
| 1117. | 12.165 | A2 | .004 V2 | .512 V3 | 1.005 V4 | .975 V5 | .205 | .000 | .674 | 1.005 | .205 |

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DATE OF RUN IS 09/10/76

PACK NUMBER: IS 210A

SHADOW PERIOD IS 13

CYCLE IS 2402.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V | |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|-------|
| 844. | .310 | V2 | 1.278 | V3 | 1.317 | V4 | 1.317 | V5 | 1.313 | .000 | 1.306 | 1.317 | 1.278 |
| 847. | .630 | V2 | 1.254 | V3 | 1.303 | V4 | 1.302 | V5 | 1.299 | .000 | 1.289 | 1.303 | 1.254 |
| 849. | .950 | V2 | 1.241 | V3 | 1.293 | V4 | 1.292 | V5 | 1.290 | .000 | 1.279 | 1.293 | 1.241 |
| 851. | 1.270 | V2 | 1.237 | V3 | 1.285 | V4 | 1.284 | V5 | 1.282 | .000 | 1.271 | 1.285 | 1.232 |
| 854. | 1.590 | V2 | 1.226 | V3 | 1.278 | V4 | 1.278 | V5 | 1.275 | .000 | 1.264 | 1.278 | 1.226 |
| 856. | 1.900 | V2 | 1.222 | V3 | 1.273 | V4 | 1.272 | V5 | 1.269 | .000 | 1.259 | 1.273 | 1.222 |
| 859. | 2.220 | V2 | 1.217 | V3 | 1.268 | V4 | 1.266 | V5 | 1.264 | .000 | 1.254 | 1.268 | 1.217 |
| 906. | 3.180 | V2 | 1.204 | V3 | 1.254 | V4 | 1.253 | V5 | 1.250 | .000 | 1.240 | 1.254 | 1.204 |
| 913. | 4.130 | V2 | 1.197 | V3 | 1.242 | V4 | 1.241 | V5 | 1.238 | .000 | 1.228 | 1.242 | 1.192 |
| 920. | 5.090 | V2 | 1.173 | V3 | 1.231 | V4 | 1.230 | V5 | 1.226 | .000 | 1.215 | 1.231 | 1.173 |
| 927. | 6.040 | V2 | 1.148 | V3 | 1.220 | V4 | 1.218 | V5 | 1.213 | .000 | 1.199 | 1.220 | 1.146 |
| 935. | 6.990 | V2 | 1.104 | V3 | 1.207 | V4 | 1.203 | V5 | 1.197 | .000 | 1.178 | 1.207 | 1.104 |
| 942. | 7.950 | V2 | 1.039 | V3 | 1.190 | V4 | 1.184 | V5 | 1.176 | .000 | 1.147 | 1.190 | 1.039 |
| 949. | 8.900 | V2 | .866 | V3 | 1.124 | V4 | 1.048 | V5 | 1.037 | .000 | 1.019 | 1.124 | .866 |
| 1004. | 10.810 | V2 | .735 | V3 | 1.041 | V4 | .986 | V5 | .846 | .000 | .902 | 1.041 | .735 |
| 1007. | 11.130 | V2 | .664 | V3 | 1.023 | V4 | .958 | V5 | .141 | .000 | .696 | 1.023 | .141 |

DATE OF RUN IS 09/10/76

PACK NUMBER IS 210A

SHADOW PERIOD IS 14

CYCLE IS

2584.

WQF 77-134
PAGE 1 30.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 849. | 1.318 | V2 | 1.277 | V3 | 1.315 | V4 | 1.308 | V5 | 1.305 | .000 | 1.301 | 1.277 |
| 857. | 1.255 | V2 | 1.237 | V3 | 1.283 | V4 | 1.275 | V5 | 1.270 | .000 | 1.265 | 1.232 |
| 906. | 1.551 | V2 | 1.217 | V3 | 1.263 | V4 | 1.253 | V5 | 1.248 | .000 | 1.244 | 1.212 |
| 916. | 1.629 | V2 | 1.194 | V3 | 1.245 | V4 | 1.236 | V5 | 1.230 | .000 | 1.226 | 1.194 |
| 925. | 1.104 | V2 | 1.174 | V3 | 1.231 | V4 | 1.220 | V5 | 1.212 | .000 | 1.209 | 1.174 |
| 935. | 1.378 | V2 | 1.137 | V3 | 1.214 | V4 | 1.201 | V5 | 1.190 | .000 | 1.185 | 1.137 |
| 945. | 1.644 | V2 | 1.069 | V3 | 1.192 | V4 | 1.169 | V5 | 1.149 | .000 | 1.144 | 1.068 |
| 947. | 1.953 | V2 | 1.044 | V3 | 1.185 | V4 | 1.155 | V5 | 1.130 | .000 | 1.128 | 1.044 |
| 949. | 1.254 | V2 | 1.014 | V3 | 1.176 | V4 | 1.133 | V5 | 1.107 | .000 | 1.108 | 1.016 |
| 954. | 1.888 | V2 | .977 | V3 | 1.156 | V4 | .085 | V5 | 1.060 | .000 | .068 | .972 |
| 1004. | 1.147 | V2 | .877 | V3 | 1.053 | V4 | .005 | V5 | .987 | .000 | .979 | .872 |
| 1009. | 1.768 | V2 | .814 | V3 | 1.024 | V4 | .973 | V5 | .949 | .000 | .940 | .816 |
| 1013. | 1.399 | V2 | .724 | V3 | 1.002 | V4 | .921 | V5 | .840 | .000 | .871 | .723 |
| 1018. | 1.037 | V2 | .587 | V3 | .971 | V4 | .685 | V5 | .412 | .000 | .663 | .412 |

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441-TRIP

115

540

244

1

AVE

911

Free

•

[illegible]

| PACK | DAY | AVE-CELL
V END DIS | AUX
ELECT | PRESS
END DIS | PRESS
END TRIP | AUX
ELEC | AVE-CELL
V END T | AVE-CELL
V END C | AHO | AHI | AHI-TRIP |
|------|-----|-----------------------|--------------|------------------|-------------------|-------------|---------------------|---------------------|--------|---------|----------|
| 2 | 564 | .0000 | .0000 | .8460 | .8460 | .0810 | 1.5927 | 1.4120 | 2.1500 | 5.5400 | 2.3000 |
| 0 | 566 | .0000 | .0000 | .8460 | .8460 | .1230 | 1.6175 | 1.4197 | 4.1200 | 6.0000 | 3.7300 |
| 0 | 567 | .0000 | .0000 | .8460 | .8460 | .1130 | 1.6587 | 1.5080 | 4.7900 | 6.2600 | 4.8000 |
| 0 | 568 | .0000 | .0000 | .8460 | .8460 | .1770 | 1.6167 | 1.5100 | 5.4100 | 8.6000 | 6.5900 |
| 0 | 569 | .0000 | .0000 | .8460 | .8460 | .1940 | 1.6175 | 1.5175 | 6.1500 | 10.3000 | 6.7000 |
| 0 | 571 | .0000 | .0000 | .8460 | .8460 | .1100 | 1.6297 | 1.5330 | 6.6700 | 10.4000 | 7.2000 |
| 0 | 572 | .0000 | .0000 | .8460 | .8460 | .1300 | 1.6277 | 1.5335 | 6.9100 | 10.2000 | 7.6500 |
| 0 | 573 | .0000 | .0000 | .8460 | .8460 | .1470 | 1.6680 | 1.5300 | 7.3000 | 10.2000 | 8.0500 |
| 0 | 575 | .0030 | .0000 | .8460 | .8460 | .1880 | 1.6275 | 1.5267 | 7.9300 | 10.6000 | 8.4100 |
| 0 | 576 | .0000 | .0000 | .8460 | .8460 | .3060 | 1.5497 | 1.5267 | 8.4000 | 11.0000 | 9.1400 |
| 0 | 577 | .0000 | .0000 | .8460 | .8460 | .1860 | 1.6185 | 1.5252 | 8.7100 | 12.4000 | 9.2300 |
| 0 | 578 | .0000 | .0000 | .8460 | .8460 | .0730 | 1.6557 | 1.5225 | 8.6600 | 13.6000 | 9.9400 |
| 0 | 579 | .0000 | .0000 | .8460 | .8460 | .0780 | 1.6425 | 1.5180 | 8.8200 | 13.9000 | 9.8000 |
| 0 | 581 | .0000 | .0000 | .8460 | .8460 | .1130 | 1.6352 | 1.5145 | 9.1000 | 13.6000 | 9.6200 |
| 0 | 582 | .0000 | .0000 | .8460 | .8460 | .1600 | 1.6342 | 1.5140 | 9.3000 | 13.7000 | 9.7200 |
| 0 | 583 | .0000 | .0000 | .8460 | .8460 | .1800 | 1.6217 | 1.5122 | 9.4800 | 14.0000 | 9.9300 |
| 0 | 585 | .0000 | .0000 | .8460 | .8460 | .3170 | 1.4600 | 1.3997 | 9.4700 | 13.8200 | 9.4000 |
| 0 | 586 | .0000 | .0000 | .8460 | .8460 | .3050 | 1.4897 | 1.4295 | 9.4800 | 15.7400 | 9.8300 |
| 0 | 588 | .0000 | .0000 | .8460 | .8460 | .0540 | 1.5920 | 1.4725 | 9.2000 | 15.2000 | 9.6000 |
| 0 | 589 | .0000 | .0000 | .8460 | .8460 | .1060 | 1.6067 | 1.4935 | 8.8600 | 14.8000 | 9.4600 |
| 0 | 591 | .0000 | .0000 | .8460 | .8460 | .0760 | 1.6137 | 1.4965 | 8.8400 | 13.8000 | 9.3700 |
| 0 | 593 | .0000 | .0000 | .8460 | .8460 | .0690 | 1.6295 | 1.5055 | 8.5400 | 13.5000 | 9.0000 |
| 0 | 594 | .0000 | .0000 | .8460 | .8460 | .1320 | 1.6045 | 1.5127 | 8.3000 | 13.3000 | 8.7200 |
| 0 | 596 | .0000 | .0000 | .8460 | .8460 | .1780 | 1.6180 | 1.5132 | 7.8300 | 12.9000 | 8.3500 |
| 0 | 597 | .0000 | .0000 | .8460 | .8460 | .1680 | 1.6487 | 1.5112 | 7.2200 | 11.7000 | 7.7900 |
| 0 | 600 | .0000 | .0000 | .8460 | .8460 | .1800 | 1.6580 | 1.5107 | 5.9700 | 10.6000 | 6.4300 |
| 0 | 601 | .0000 | .0000 | .8460 | .8460 | .2000 | 1.6735 | 1.5157 | 5.2800 | 9.2000 | 5.8400 |
| 0 | 602 | .0000 | .0000 | .8460 | .8460 | .2200 | 1.6722 | 1.5195 | 4.7000 | 7.9000 | 5.1000 |
| 0 | 604 | .0000 | .0000 | .8460 | .8460 | .1900 | 1.6782 | 1.5275 | 2.8000 | 7.0000 | 4.1800 |
| 0 | 605 | .0000 | .0000 | .8460 | .8460 | .1900 | 1.6862 | 1.5202 | 1.9000 | 6.5000 | 2.1500 |

WQEC/C 77-134

5. Pack 211A, 5-cells

a. Cell information: (Same as Pack 207A, Section V. C. 1.).

b. Parameters:

| | | | |
|--------------------------|-----|-------------------------------------|-----|
| Depth of Discharge (%) | 60 | Temperature (°C) | 40 |
| Charge Control | CC | Float/Trickle Charge Current (amps) | .20 |
| Charge Current (amps) | 1.2 | Auxiliary Electrode:* | |
| Discharge Current (amps) | 6.0 | Resistance (ohms) | 300 |

*--Cells 3 and 4.

c. Capacity Checks: (Discharge to .50 volts any cell).

| | Cell
1 | Cell
2 | Cell
3 | Cell
4 | Cell
5 | ah
out |
|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Shadow 5 (Figure 116) | .804 | .510 | 1.010 | .482 | .920 | 6.42 |
| Postcycling | 7.92 | 7.62 | 6.78 | 6.72 | 7.62 | |

d. Test results during Eclipse Season: (Figure 117 and 118).

(1) Average End of Discharge Voltages: The voltages are very low as the pack did not deliver the required capacity (7.2 ah) during the middle portion of the period.

(2) Average Cell Voltages at Trip and End of Charge: The pack was to be charged at 1.20 amperes with no auxiliary electrode trip, as this type control was removed during period 4. High cell voltages and pressure were produced at the beginning of charge, therefore, it was necessary to reduce the current whenever the pressure began to exceed 100 psia. The current was reduced every day up to the day before the capacity check, from then on it was not reduced as the pressure did not exceed 100 psia.

(3) The pack was discontinued following shadow period 5.

e. Cell Analysis:

(1) Cells 1, 4 and 5 were torn-down with the following observations:

(a) Separator deterioration was evident as the material was extremely thin.

(b) Separator material was moist.

(c) No discoloration, as a result of migration, was observed on the separator material. Material was slightly adhering to negative plates in the middle of the plate stack.

(d) Small blisters were found at the top of the positive plates of cell 1.

(e) Positive plates were uncoined at the bottom.

(2) Gas samples from cell 1 had the following percentages:

Oxygen (0%)

Hydrogen (2.5%)

Nitrogen (89%)

(3) Cells 2 and 3 were sent to GSFC for analysis.

KEY
 * HIGH CELL
 * LOW CELL
 * AVERAGE

PACK NUMBER IS 211A
 SHADOW PERIOD IS 5
 CYCLE NUMBER IS 750
 DISCHARGE RATE IS 0.0

WQEC/C 77-134

AMPERE HOUR OUT

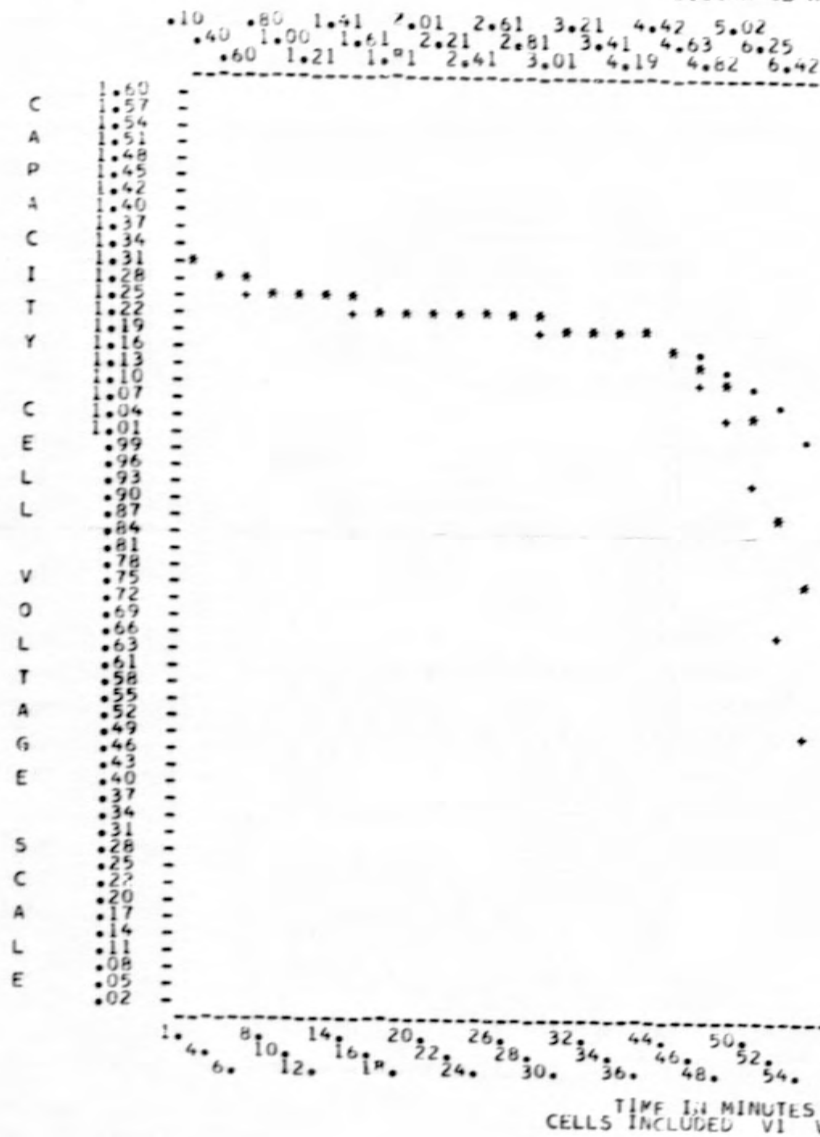


FIGURE 116

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KEY
 * AVE END DISCHARGE VOLTAGE
 + AVE CELL VOLTAGE AT TRIP
 . AVE CELL VOLTAGE AT EOC
 A AVE AUX-ELECT. VOLT. AT EOD
 B AVE AUX-ELECT. VOLT. AT TRIP
 X PRESSURE TRANS. AT EOD
 Y PRESSURE TRANS. AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 211A

DEPTH DISCHARGE 60
 TEMPERATURE 40 WQEC/C 77-134
 AMPERE RATE 12
 CATALOG 42B012AB
 SERIAL 10-4, 10-7, 9-9, 9-11, 10-11
 GENERAL ELECTRIC CELLS
 PROJECT AT5 F/G (Prototype)

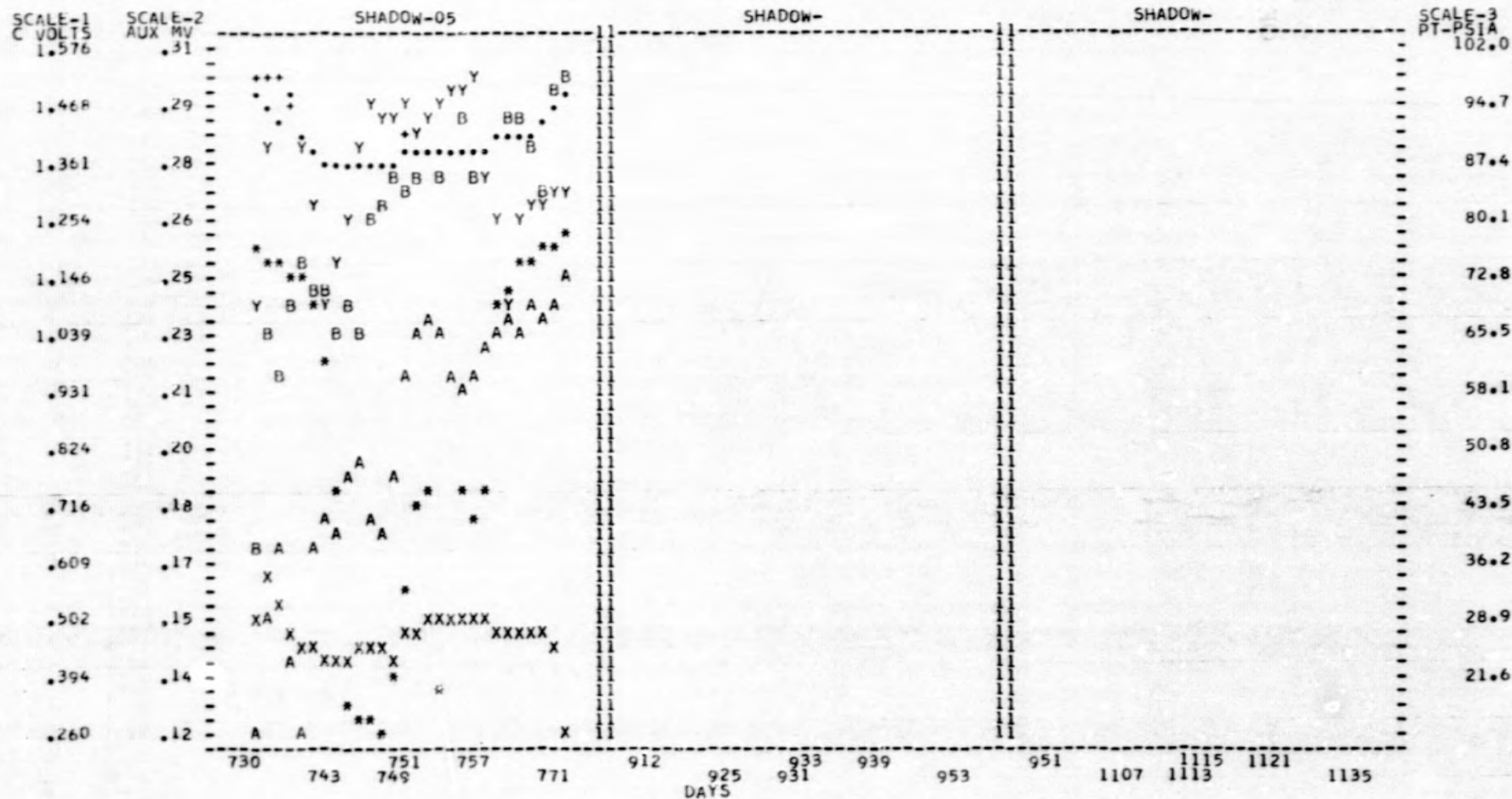


FIGURE 117

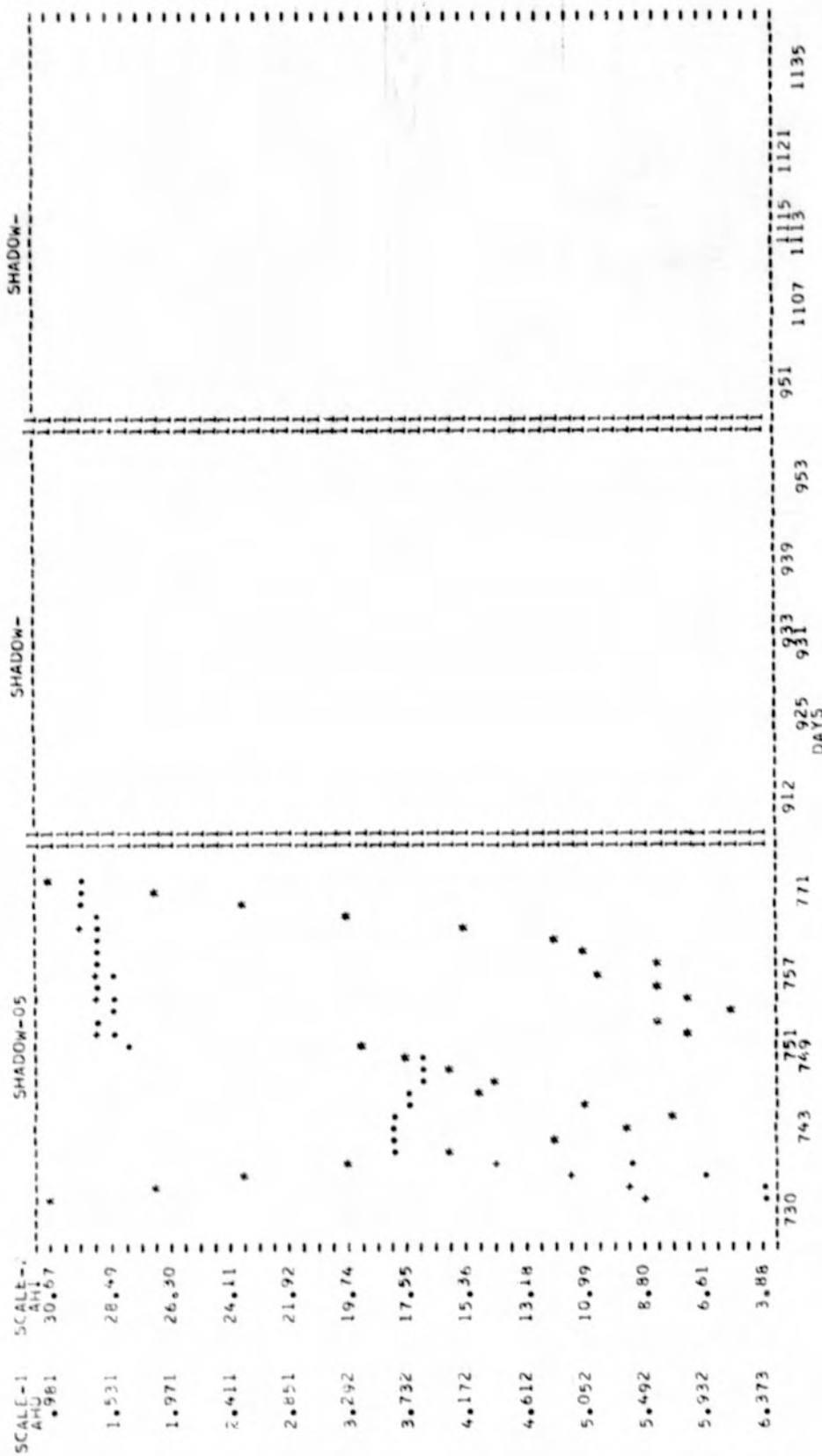
NOTE: Pack discontinued following Shadow 5.

KEY
 * AHU-TOTAL
 * AHU AT TRIP
 * AHU AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 211A

DEPTH DISCHARGE 60 WQEC/C 77-134
 TEMPERATURE 40
 AIRTEMPERATURE 12
 CATALOG 428012AB
 SERIAL 10-4-10-7-9-9-9-11-10-11
 GENERAL ELECTRIC CELLS
 PROJECT ATS F/G (Prototype)



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FIGURE 118

NOTE: Pack discontinued following Shadow 5.

6. Pack 212A, 5-cells

a. Cell information: (Same as Pack 207A, Section V. D. 1.).

b. Parameters:

| | | | |
|--------------------------|-----|-----------------------|-----|
| Depth of Discharge (%) | 80 | Float Current (amps) | 0.0 |
| Charge Control | AE | Auxiliary Electrode:* | |
| Charge Current (amps) | .60 | Resistance (ohms) | 300 |
| Discharge Current (amps) | 8.0 | Trip Voltage (mv) | 150 |
| Temperature (°C) | -20 | | |

*--Cells 1, 3, 4 and 5.

c. Capacity checks: (Discharge to .5 volts any cell).

| | Cell
1 | Cell
2 | Cell
3 | Cell
4 | Cell
5 | ah
out |
|------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Shadow #5 (Figure 119) | .447 | .860 | .823 | .836 | .696 | 8.20 |
| Shadow #6 (Figure 120) | .896 | .491 | .626 | .694 | .391 | 8.24 |
| Shadow #7 (Figure 121) | .249 | .493 | .675 | .718 | .659 | 8.27 |
| Shadow #8 (Figure 122) | ** | .481 | .841 | .664 | .733 | 8.21 |
| Shadow #9 (Figure 123) | | .386 | 1.136 | 1.137 | .972 | 6.34 |
| Shadow #10 | | .437 | 1.106 | 1.119 | 1.029 | 6.82 |
| Shadow #11 | | .373 | 1.091 | 1.074 | .962 | 8.93 |
| Postcycling | | 7.00 | 7.00 | 7.22 | 7.22 | |

**--Cell 1 leaking, removed prior to shadow #8.

d. Test results during Eclipse Seasons: (Figures 124 to 129).

(1) Average End of Discharge Voltages: The voltages are very low and the pack did not deliver the required capacity (9.6 ah) during the middle portion of any shadow period after period 2.

(2) The performance of the pack, following shadow period 8, was very erratic as can be seen from the graphs. Trip voltages (prior to period 9), although not shown for periods 5 through 8 due to a programming problem, were always in the range of 1.55 to 1.70-volts.

(3) There were many parameter changes made during the first eclipse season in order that this pack could operate at this temperature. One change, was that when the trip voltage was reached, the pack would be placed on open-circuit instead of a trickle charge because of extremely high voltages.

(4) Cell 1's pressure transducer assembly was bumped, prior to period 8 which caused the weld at the base of the fill tube to break. Cell 1 was removed prior to period 8. The pressures, during periods 6 and 7, ranged from 8 to 25 psia which is a change from previous periods.

(5) The pack was discontinued following shadow period 11.

e. Performance during Sun Periods: The pack completed 10 sun periods prior to being discontinued. The pack was on open-circuit during these periods and the auxiliary electrode voltages were 0.0 volts. The cell voltages tapered downward from the beginning (1.40 volts) to the end (1.30 volts) of the sunlight periods.

f. Cell Analysis:

(1) Cell 5 was torn down with the following observations:

(a) Positive plates were uncoined at the bottom.

(b) No separator deterioration.

(c) Very small degree of migration located only in the middle of the plate stack.

(d) Small black spots, ranging in size from a pinhead to 1/8 inch diameter, were found on the positive plates. There were an average of two spots on each side of each plate and sometimes the separator material next to the spot was discolored.

(2) Chemical analysis of cell 5 is contained in Table II, Section VI.

AMPERE HOUR UNIT

PACK NUMBER 15 212A
SHOOT PERIOD 15 5
CYCLE NUMBER 15 750
DISCHARGE RATE 15 8.0

KEY HIGH CELL
+ LOW CELL
* AVERAGE

1. 1.05 1.85 2.63 3.43 4.23 5.87 6.60 7.36 8.02
53 1.22 2.11 2.90 3.70 4.49 6.08 6.86 7.60 8.20
79 1.58 2.47 3.17 3.97 4.76 6.34 7.12 7.82

C A P A C I T Y C E L L V O L T A G E S C A L E

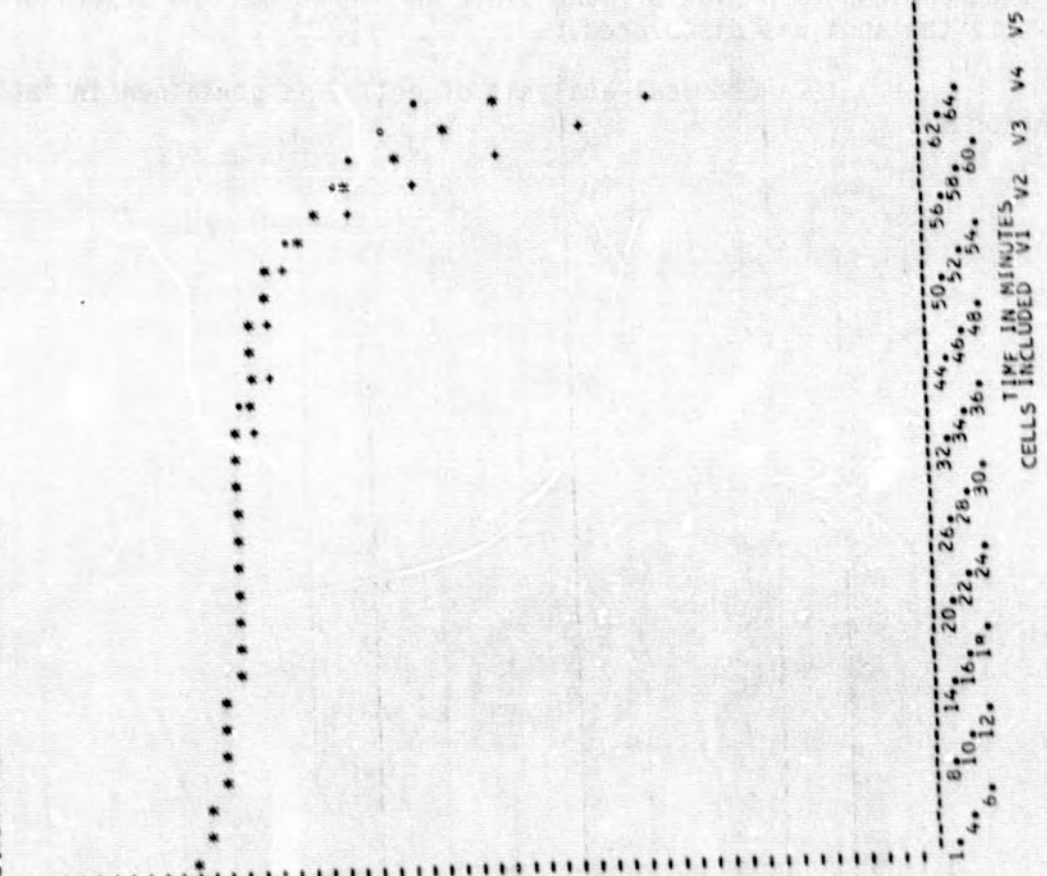


FIGURE 119

PACK NUMBER IS 2124
SHADOW PERIOD IS 6.932
CYCLE NUMBER IS 8.0
DISCHARGE RATE IS 8.0

AMPERE HOUR OUT

13 1.07 1.87 2.67 3.47 4.27 5.07 5.87 6.66 7.43 8.07
53 1.34 2.14 2.94 3.74 4.54 5.34 6.14 6.93 7.67 8.24
80 1.60 2.40 3.21 4.01 4.81 5.61 6.40 7.19 7.88

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KEY
+ HIGH CELL
+ LOW CELL
+ AVERAGE

C A P A C I T Y C E L L V O L T A G E S C A L E

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1. 4. 8. 10. 12. 14. 16. 18. 20. 22. 24. 26. 28. 30. 32. 34. 36. 38. 40. 42. 44. 46. 48. 50. 52. 54. 56. 58. 60. 62. 64.

TIME IN MINUTES
CELLS INCLUDED V1 V2 V3 V4 V5

FIGURE 120

KEY HIGH CELL
 * LOW CELL
 * AVERAGE

PACK NUMBER IS 212A
 SHADOW PERIOD IS 1114.
 CYCLE NUMBER IS 1114.
 DISCHARGE RATE IS 8.

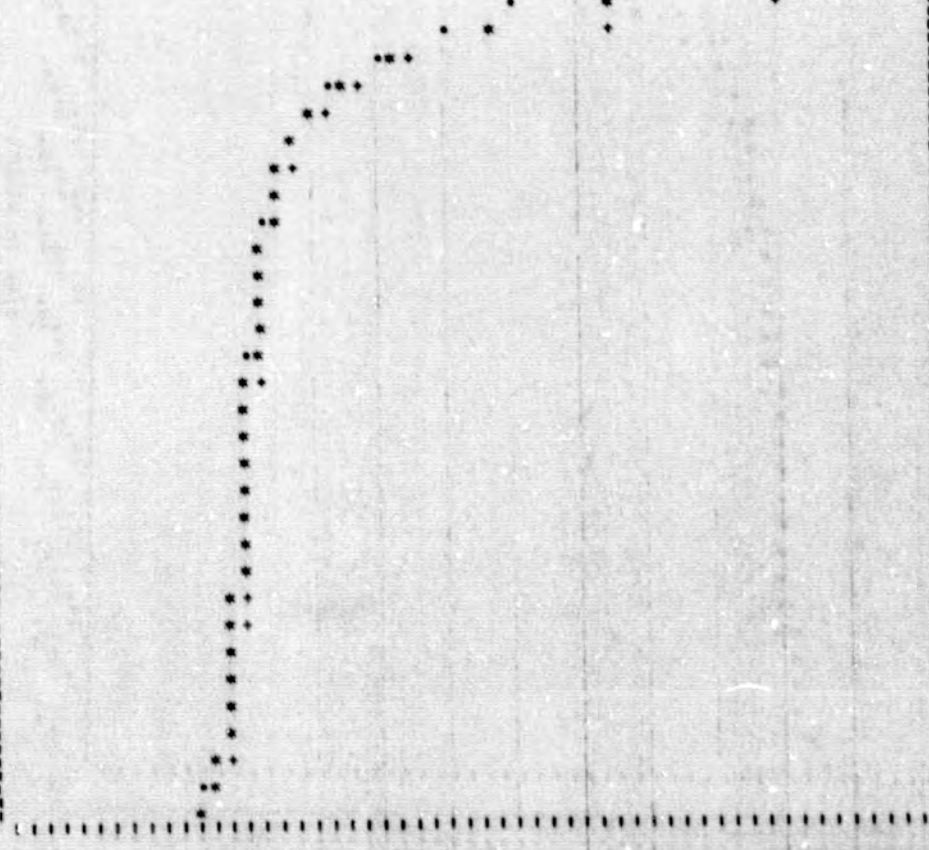
WJEC/C 77-134

AMPERE HOUR (AHT)

1. 1.06 1.87 7.67 3.47 4.27 5.07 5.87 6.67 7.47 8.27
 .53 1.33 2.13 2.93 3.73 4.53 5.33 6.13 6.93 7.73 8.53
 .80 1.60 2.40 3.20 4.00 4.80 5.60 6.40 7.20 8.00

C A P A C I T Y C E L L V O L T A G E S C A L E

01 07 41 18 52 44 42 40 37 34 31 28 26 24 22 20 18 16 14 12 10 08 06 04 02 00



1. 4. 8. 10. 12. 14. 16. 18. 20. 22. 24. 26. 28. 30. 32. 34. 36. 38. 40. 42. 44. 46. 48. 50. 52. 54. 56. 58. 60. 62.

TIME IN MINUTES
 CELLS INCLUDED V1 V2 V3 V4 V5

FIGURE 121

AMPERE HOUR OUT

PACK NUMBER IS 212A
 SCHEDULED IS 8
 DISCHARGE RATE IS 8.0

1.06 1.86 3.45 5.04 6.63 8.21
 2.66 4.25 5.84 7.42

KEY
 * HIGH CELL
 + LOW CELL
 * AVERAGE

C A P A C I T Y C E L L V O L T A G E S C A L E
 1.06 1.86 3.45 5.04 6.63 8.21
 2.66 4.25 5.84 7.42

1. 8. 14. 20. 26. 32. 38. 44. 50. 56. 62.

TIME IN MINUTES V2 V3 V4 V5
 CELLS INCLUDED

FIGURE 122

ORIGINAL PAGE IS
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KEY
 * HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 212A
 SHADOW PERIOD IS 9
 CYCLE NUMBER IS 1477.
 DISCHARGE RATE IS 8.0

WQEC/C 77-134

AMPERE HOUR OUT

.08 1.03 1.97 2.91 3.85 4.79 5.72
 .40 1.35 2.29 3.23 4.16 5.10 6.03
 .71 1.66 2.60 3.54 4.48 5.41 6.34

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45
42
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36
33
30
27
24
21
18
15
12
9
6
3
0

1. 3. 6. 9. 10. 13. 15. 18. 20. 22. 25. 27. 30. 32. 34. 37. 39. 42. 44. 46. 49.

TIME IN MINUTES
 CELLS INCLUDED A3

V2 V3 V4 V5

ORIGINAL PAGE IS
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FIGURE 123

KEY
 * AVE END DISCHARGE VOLTAGE
 + AVE CELL VOLTAGE AT TRIP
 . AVE CELL VOLTAGE AT EOC
 A AVE AUX-ELECT. VOLT. AT EOD
 B AVE AUX-ELECT. VOLT. AT TRIP
 X PRESSURE TRANS. AT EOD
 Y PRESSURE TRANS. AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 212A

DEPTH DISCHARGE 80 WQEC/C 77-134
 TEMPERATURE -20
 AMPERE RATE 12
 CATALOG 428012AB
 SERIAL 9-3,10-15,9-16,9-18,9-20
 GENERAL ELECTRIC CELLS
 PROJECT ATS F/G (Prototype)

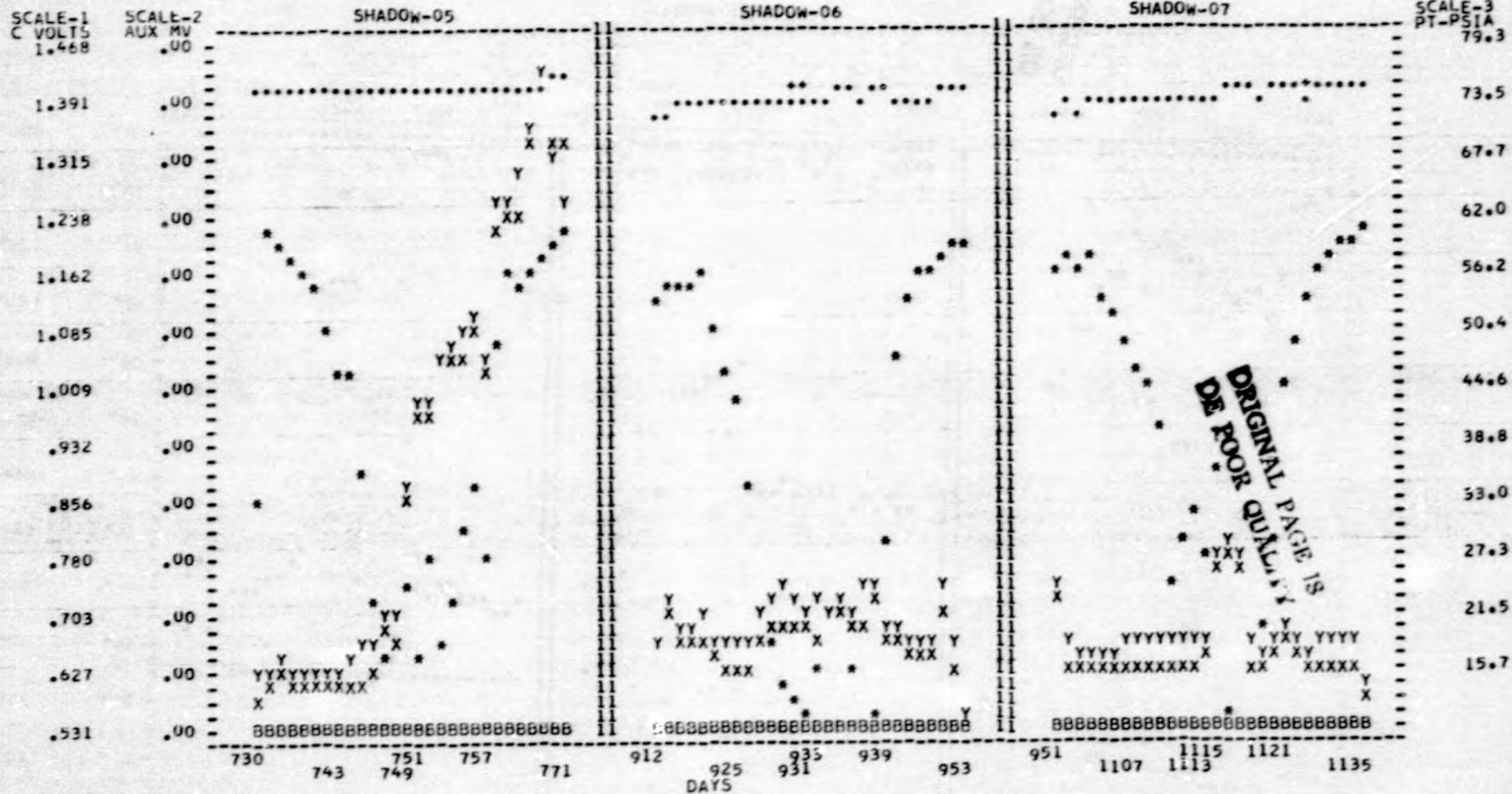


FIGURE 124

ORIGINAL PAGE IS
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KEY
 * AVE. END DISCHARGE VOLTAGE
 + AVE. CELL VOLTAGE AT TRIP
 A AVE. CELL VOLTAGE AT EOD
 A AVE. AUX. ELECT. VOLT. AT EOD
 B AVE. AUX. ELECT. VOLT. AT TRIP
 PRESSURE TRANS. AT EOD
 PRESSURE TRANS. AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 212A

DEPTH DISCHARGE 80
 TEMPERATURE -20
 AMPERE RATE 12
 CATALOG 428012AB
 SERIAL 9-3, 10-15, 9-16, 9-18, 9-20
 GENERAL ELECTRIC CELLS
 PROJECT ATS F/G (Prototype)

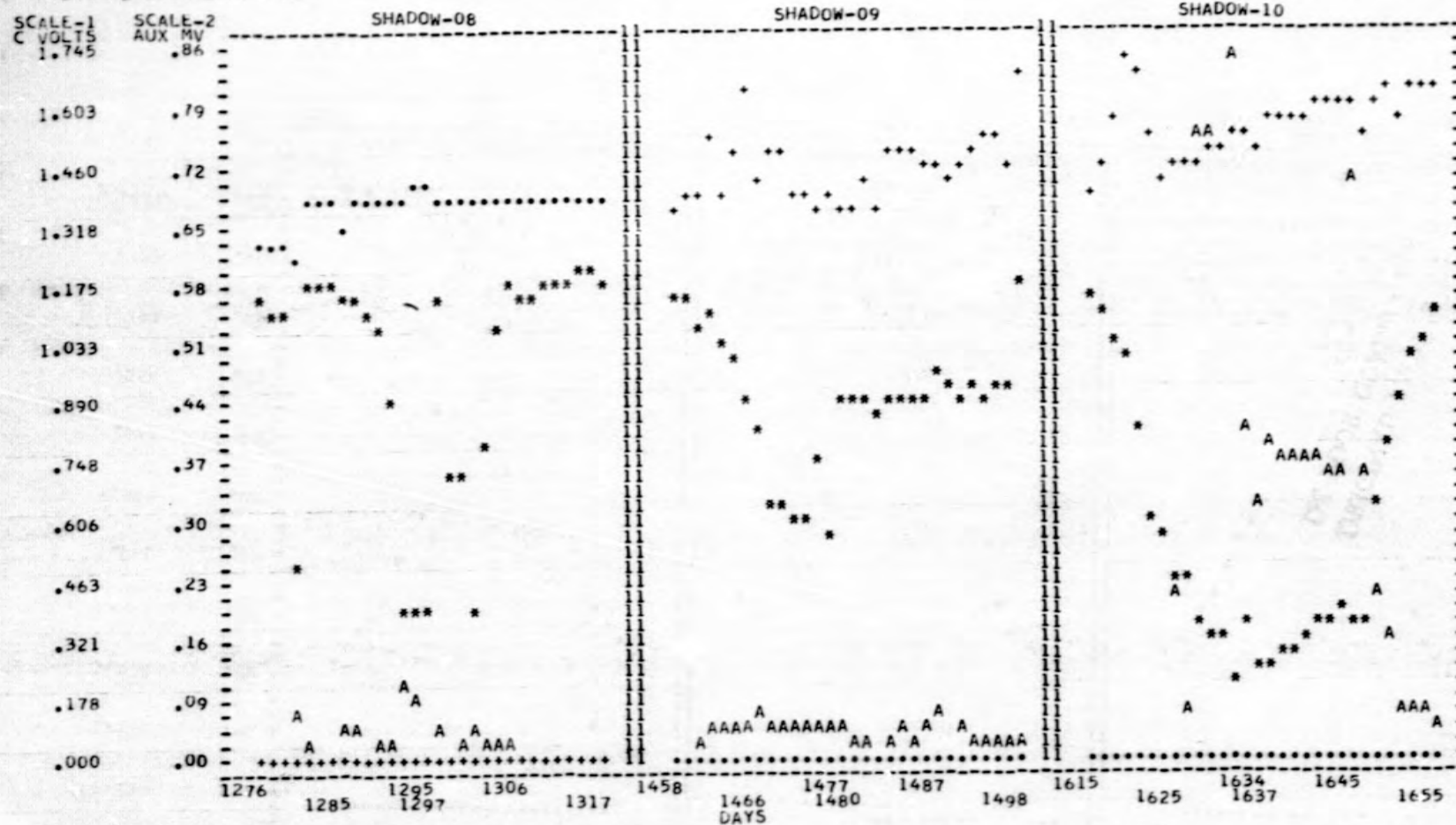


FIGURE 125

288

NOTE: Cell 1 removed prior to Shadow 8.

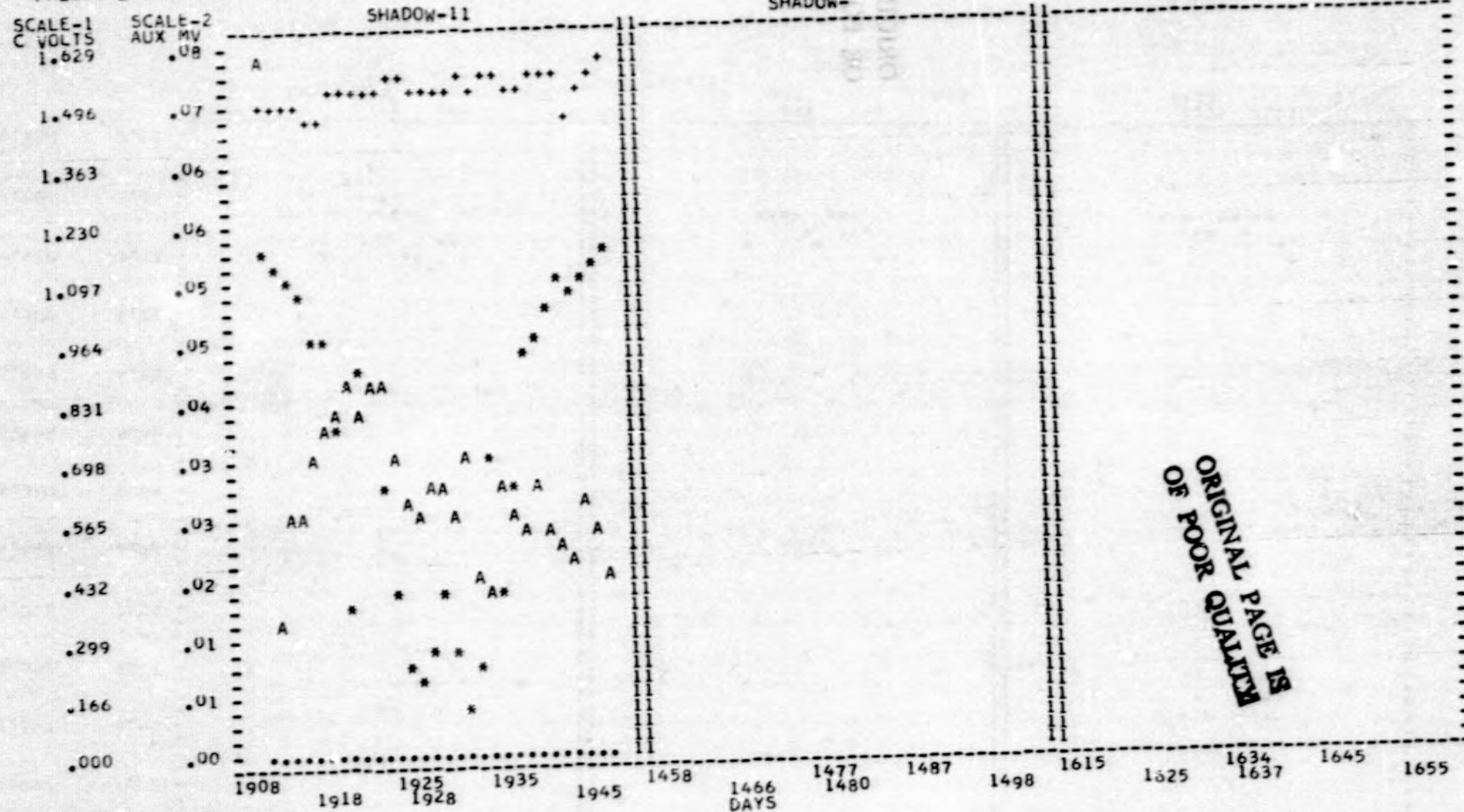
ORIGINAL PAGE IS
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KEY
 * AVE END DISCHARGE VOLTAGE
 * AVE CELL VOLTAGE AT TRIP
 * AVE CELL VOLTAGE AT EOC
 A AVE AUX-ELECT. VOLT. AT EOD
 B AVE AUX-ELECT. VOLT. AT TRIP
 PRESSURE TRANS. AT EOD
 PRESSURE TRANS. AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 212A

DEPTH DISCHARGE 80 WQEC/C 77-134
 TEMPERATURE -20
 AMPERE RATE 12
 CATALOG 428012AB
 SERIAL 9-3-10-15-9-16-9-18-9-20
 GENERAL ELECTRIC CELLS
 PROJECT AT5 F/G (Prototype)



NOTE: (1) Cell 1 removed prior to Shadow 8.
 (2) Pack discontinued following Shadow 11.

FIGURE 126

ORIGINAL PAGE IS
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KEY
 * AHU
 + AH1-TOTAL
 • AH1 AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 212A

DEPTH DISCHARGE 80 WQEC/C 77-134
 TEMPERATURE -20
 AMPERE RATE 12
 CATALOG 42B012AB
 SERIAL 9-3,10-15,9-16,9-18,9-20
 GENERAL ELECTRIC CELLS
 PROJECT ATS F/G (Prototype)

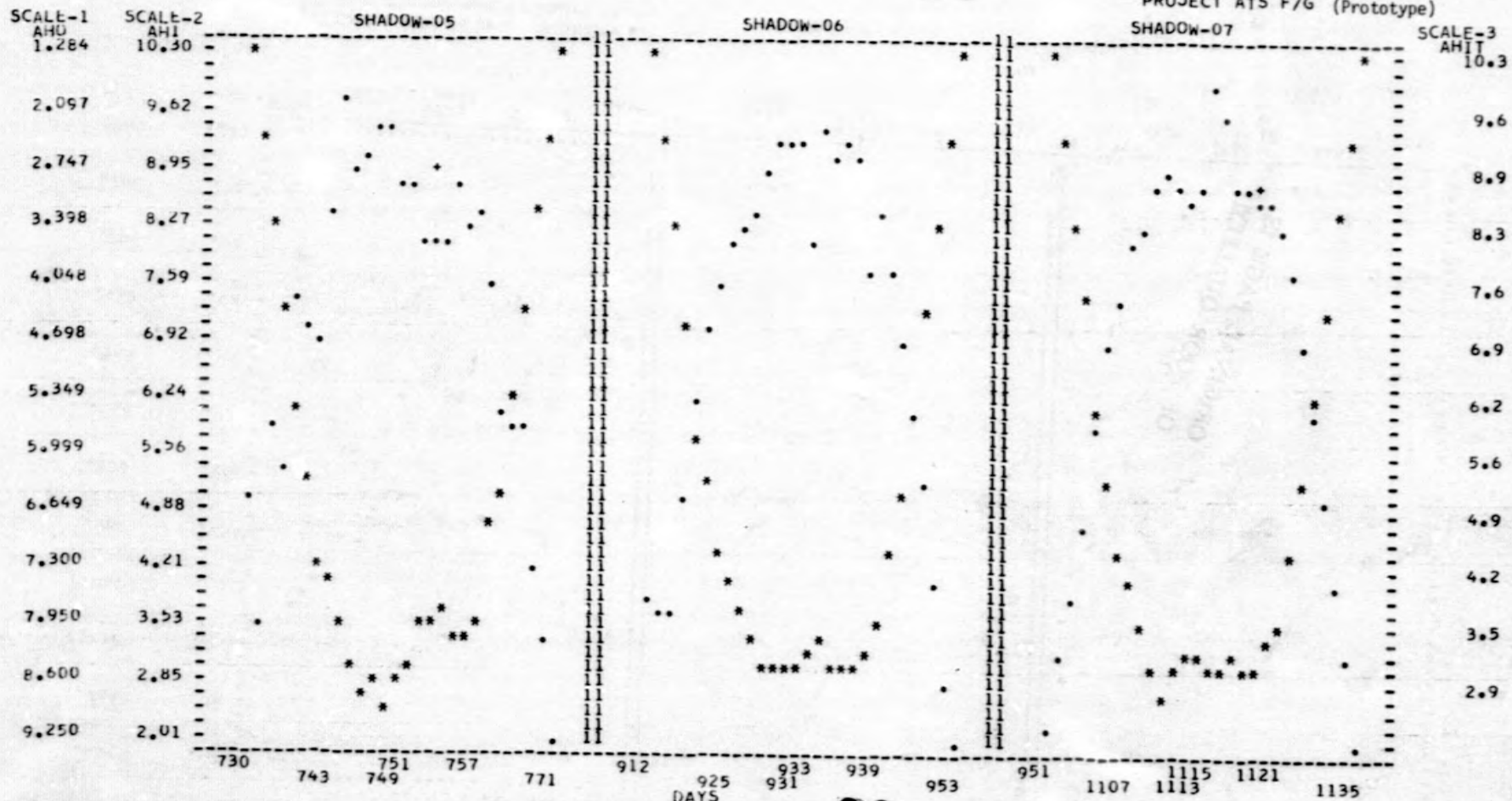


FIGURE 127

ORIGINAL PAGE IS
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KEY
 * AHQ
 + AH1-TOTAL
 . AH1 AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 212A

DEPTH DISCHARGE 80
 TEMPERATURE -20
 AMPERE RATE 12
 CATALOG 428012AB
 SERIAL 9-3-10-15-9-16-9-18-9-20
 GENERAL ELECTRIC CELLS
 PROJECT AT5 F/G (Prototype)

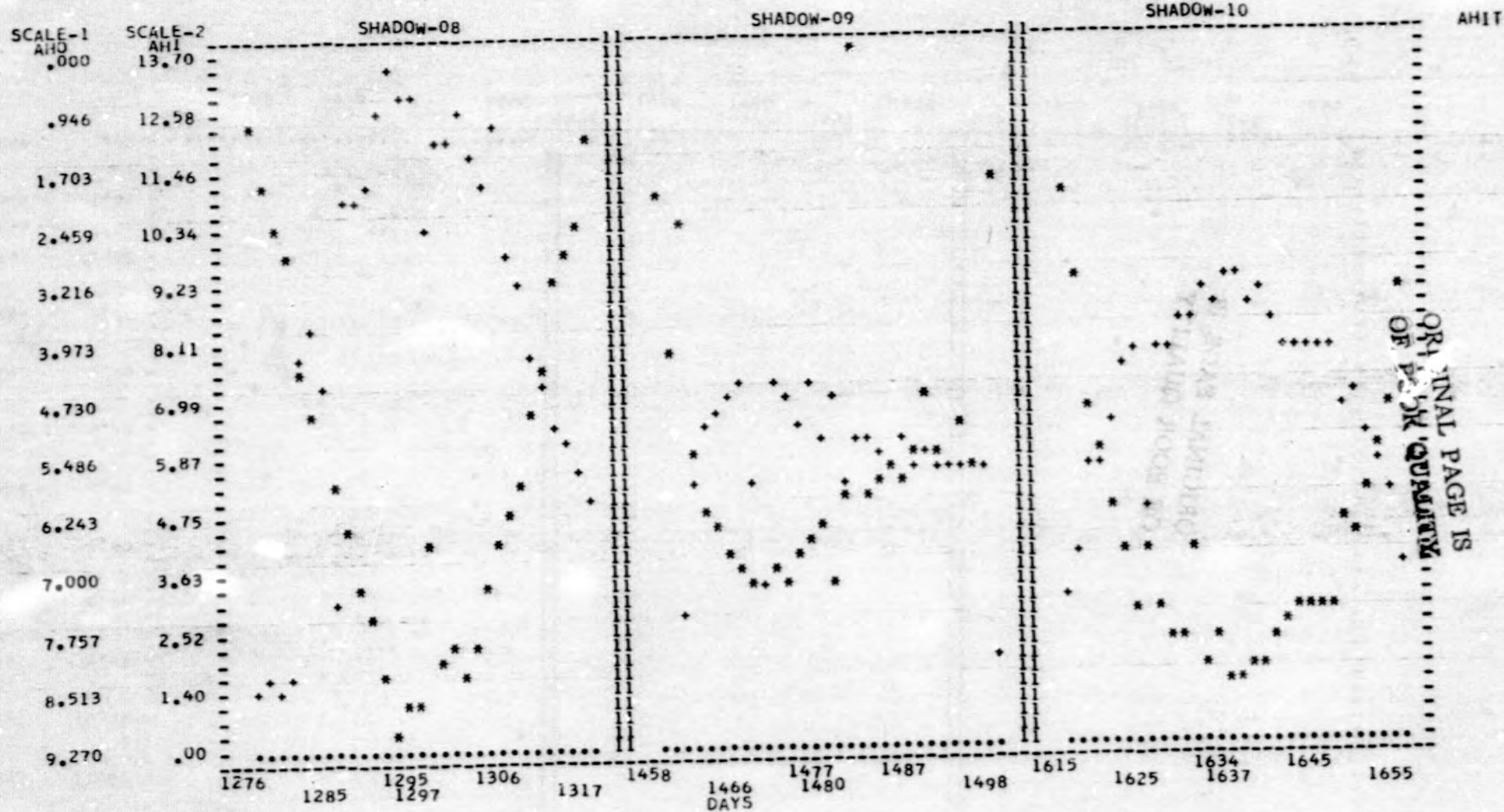


FIGURE 128

291

NOTE: Cell 1 removed prior to Shadow 8.

KEY
 * AHD
 + AHI-TOTAL
 • AHI AT TRIP

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 212A

DEPTH DISCHARGE 80 WQEC/C 77-134
 TEMPERATURE -20
 AMPERE RATE 12
 CATALOG 42B012AB
 SERIAL 9-3, 10-15, 9-16, 9-18, 9-20
 GENERAL ELECTRIC CELLS
 PROJECT AT5 F/G (Prototype)

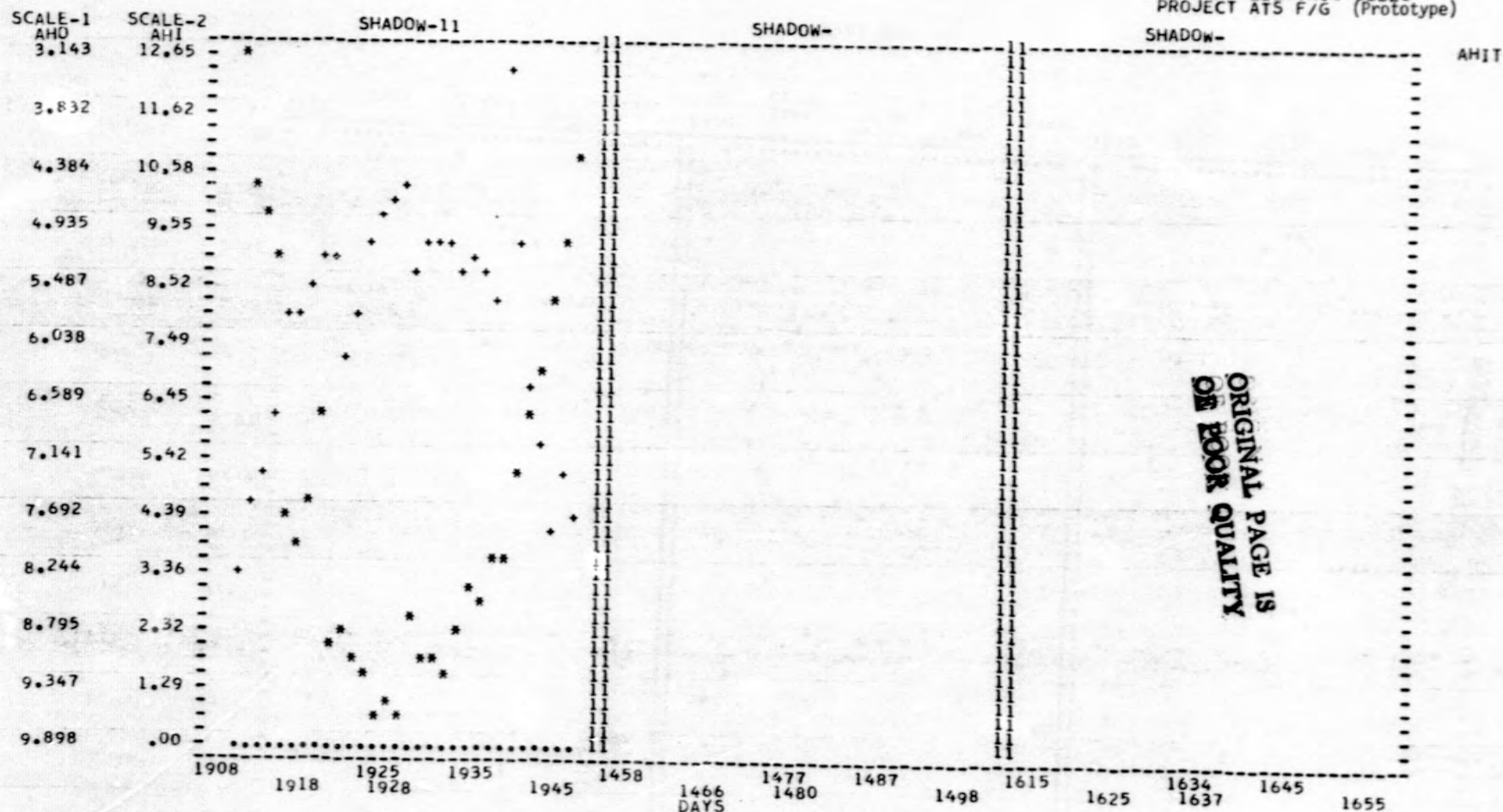


FIGURE 129

NOTE: (1) Cell I removed prior to Shadow 8.
 (2) Pack discontinued following Shadow 11.

DATE OF RUN IS 09/10/76

PACK NUMBER IS 212A

SHADOW PERIOD IS 5

CYCLE IS

750.

WQEC/1-134
PAGE 1 32.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 1. | .132 | V1 | 1.281 | V2 | 1.280 | V3 | 1.281 | V4 | 1.281 | V5 | 1.280 | 1.281 | 1.280 |
| 4. | .527 | V1 | 1.252 | V2 | 1.251 | V3 | 1.253 | V4 | 1.253 | V5 | 1.252 | 1.253 | 1.251 |
| 6. | .791 | V1 | 1.234 | V2 | 1.236 | V3 | 1.236 | V4 | 1.237 | V5 | 1.238 | 1.238 | 1.236 |
| 8. | 1.055 | V1 | 1.224 | V2 | 1.226 | V3 | 1.227 | V4 | 1.227 | V5 | 1.229 | 1.229 | 1.226 |
| 10. | 1.319 | V1 | 1.219 | V2 | 1.219 | V3 | 1.219 | V4 | 1.220 | V5 | 1.220 | 1.220 | 1.218 |
| 12. | 1.583 | V1 | 1.211 | V2 | 1.211 | V3 | 1.212 | V4 | 1.213 | V5 | 1.215 | 1.215 | 1.211 |
| 14. | 1.846 | V1 | 1.204 | V2 | 1.208 | V3 | 1.209 | V4 | 1.209 | V5 | 1.210 | 1.210 | 1.206 |
| 16. | 1.110 | V1 | 1.207 | V2 | 1.203 | V3 | 1.204 | V4 | 1.203 | V5 | 1.205 | 1.205 | 1.202 |
| 18. | 3.372 | V1 | 1.199 | V2 | 1.201 | V3 | 1.202 | V4 | 1.201 | V5 | 1.201 | 1.202 | 1.199 |
| 20. | 2.635 | V1 | 1.194 | V2 | 1.198 | V3 | 1.199 | V4 | 1.198 | V5 | 1.198 | 1.199 | 1.195 |
| 22. | 2.901 | V1 | 1.191 | V2 | 1.194 | V3 | 1.195 | V4 | 1.194 | V5 | 1.195 | 1.195 | 1.191 |
| 24. | 3.168 | V1 | 1.189 | V2 | 1.192 | V3 | 1.192 | V4 | 1.191 | V5 | 1.191 | 1.192 | 1.189 |
| 26. | 3.435 | V1 | 1.185 | V2 | 1.189 | V3 | 1.190 | V4 | 1.189 | V5 | 1.189 | 1.188 | 1.185 |
| 28. | 3.701 | V1 | 1.183 | V2 | 1.187 | V3 | 1.187 | V4 | 1.186 | V5 | 1.185 | 1.186 | 1.183 |
| 30. | 3.966 | V1 | 1.180 | V2 | 1.186 | V3 | 1.185 | V4 | 1.184 | V5 | 1.183 | 1.184 | 1.180 |
| 32. | 4.231 | V1 | 1.179 | V2 | 1.182 | V3 | 1.182 | V4 | 1.181 | V5 | 1.180 | 1.181 | 1.178 |
| 34. | 4.495 | V1 | 1.175 | V2 | 1.180 | V3 | 1.180 | V4 | 1.179 | V5 | 1.177 | 1.180 | 1.175 |
| 36. | 4.759 | V1 | 1.170 | V2 | 1.177 | V3 | 1.176 | V4 | 1.174 | V5 | 1.172 | 1.174 | 1.170 |
| 38. | 5.023 | V1 | 1.166 | V2 | 1.166 | V3 | 1.164 | V4 | 1.160 | V5 | 1.154 | 1.157 | 1.154 |
| 40. | 5.287 | V1 | 1.158 | V2 | 1.158 | V3 | 1.156 | V4 | 1.154 | V5 | 1.151 | 1.154 | 1.149 |
| 42. | 5.551 | V1 | 1.147 | V2 | 1.151 | V3 | 1.150 | V4 | 1.148 | V5 | 1.145 | 1.147 | 1.142 |
| 44. | 5.816 | V1 | 1.129 | V2 | 1.141 | V3 | 1.139 | V4 | 1.139 | V5 | 1.133 | 1.136 | 1.129 |
| 46. | 6.080 | V1 | 1.105 | V2 | 1.127 | V3 | 1.122 | V4 | 1.123 | V5 | 1.113 | 1.118 | 1.105 |
| 48. | 6.343 | V1 | 1.097 | V2 | 1.097 | V3 | 1.091 | V4 | 1.094 | V5 | 1.072 | 1.083 | 1.060 |
| 50. | 6.604 | V1 | 1.069 | V2 | 1.058 | V3 | 1.051 | V4 | 1.051 | V5 | 1.021 | 1.034 | 1.009 |
| 52. | 6.862 | V1 | 1.058 | V2 | 1.017 | V3 | 1.005 | V4 | 1.008 | V5 | 1.000 | 1.000 | 1.000 |
| 54. | 7.116 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | V5 | 1.000 | 1.000 | 1.000 |
| 56. | 7.361 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | V5 | 1.000 | 1.000 | 1.000 |
| 58. | 7.596 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | V5 | 1.000 | 1.000 | 1.000 |
| 60. | 7.816 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | V5 | 1.000 | 1.000 | 1.000 |
| 62. | 8.020 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | V5 | 1.000 | 1.000 | 1.000 |
| 64. | 8.205 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | V5 | 1.000 | 1.000 | 1.000 |

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DATE OF RUN IS 09/10/76

PACK NUMBER IS 212A

SHADOW PERIOD IS 6

CYCLE IS

932.

PAGE IS 33.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|------|------|--------|---------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 1. | .133 | V1 | 1.273 | V2 | 1.265 | V3 | 1.269 | V4 | 1.268 | V5 | 1.267 | 1.273 | 1.265 |
| 4. | .534 | V1 | 1.247 | V2 | 1.240 | V3 | 1.244 | V4 | 1.244 | V5 | 1.243 | 1.247 | 1.240 |
| 6. | .802 | V1 | 1.234 | V2 | 1.227 | V3 | 1.232 | V4 | 1.232 | V5 | 1.231 | 1.234 | 1.227 |
| 8. | .069 | V1 | 1.225 | V2 | 1.217 | V3 | 1.222 | V4 | 1.222 | V5 | 1.221 | 1.225 | 1.217 |
| 10. | .336 | V1 | 1.218 | V2 | 1.210 | V3 | 1.215 | V4 | 1.215 | V5 | 1.212 | 1.218 | 1.210 |
| 12. | .603 | V1 | 1.212 | V2 | 1.204 | V3 | 1.209 | V4 | 1.209 | V5 | 1.207 | 1.212 | 1.204 |
| 14. | .871 | V1 | 1.208 | V2 | 1.200 | V3 | 1.205 | V4 | 1.205 | V5 | 1.202 | 1.208 | 1.200 |
| 16. | .138 | V1 | 1.203 | V2 | 1.197 | V3 | 1.200 | V4 | 1.200 | V5 | 1.198 | 1.203 | 1.197 |
| 18. | .405 | V1 | 1.200 | V2 | 1.193 | V3 | 1.198 | V4 | 1.197 | V5 | 1.193 | 1.200 | 1.193 |
| 20. | .672 | V1 | 1.198 | V2 | 1.190 | V3 | 1.192 | V4 | 1.192 | V5 | 1.190 | 1.198 | 1.190 |
| 22. | .940 | V1 | 1.194 | V2 | 1.188 | V3 | 1.190 | V4 | 1.190 | V5 | 1.186 | 1.194 | 1.188 |
| 24. | .207 | V1 | 1.189 | V2 | 1.183 | V3 | 1.187 | V4 | 1.187 | V5 | 1.186 | 1.189 | 1.183 |
| 26. | .474 | V1 | 1.185 | V2 | 1.180 | V3 | 1.183 | V4 | 1.183 | V5 | 1.183 | 1.185 | 1.180 |
| 28. | .740 | V1 | 1.182 | V2 | 1.178 | V3 | 1.180 | V4 | 1.180 | V5 | 1.180 | 1.182 | 1.178 |
| 30. | .007 | V1 | 1.179 | V2 | 1.174 | V3 | 1.176 | V4 | 1.176 | V5 | 1.176 | 1.179 | 1.174 |
| 32. | .274 | V1 | 1.177 | V2 | 1.170 | V3 | 1.173 | V4 | 1.172 | V5 | 1.168 | 1.177 | 1.170 |
| 34. | .541 | V1 | 1.171 | V2 | 1.167 | V3 | 1.170 | V4 | 1.169 | V5 | 1.163 | 1.171 | 1.167 |
| 36. | .807 | V1 | 1.167 | V2 | 1.163 | V3 | 1.166 | V4 | 1.165 | V5 | 1.160 | 1.167 | 1.163 |
| 38. | .074 | V1 | 1.165 | V2 | 1.159 | V3 | 1.162 | V4 | 1.160 | V5 | 1.155 | 1.165 | 1.159 |
| 40. | .340 | V1 | 1.162 | V2 | 1.155 | V3 | 1.158 | V4 | 1.156 | V5 | 1.149 | 1.162 | 1.155 |
| 42. | .607 | V1 | 1.159 | V2 | 1.153 | V3 | 1.152 | V4 | 1.150 | V5 | 1.143 | 1.159 | 1.153 |
| 44. | .873 | V1 | 1.155 | V2 | 1.149 | V3 | 1.148 | V4 | 1.145 | V5 | 1.139 | 1.155 | 1.149 |
| 46. | .138 | V1 | 1.151 | V2 | 1.143 | V3 | 1.143 | V4 | 1.135 | V5 | 1.127 | 1.151 | 1.143 |
| 48. | .402 | V1 | 1.143 | V2 | 1.133 | V3 | 1.133 | V4 | 1.130 | V5 | 1.120 | 1.143 | 1.133 |
| 50. | .665 | V1 | 1.139 | V2 | 1.127 | V3 | 1.127 | V4 | 1.119 | V5 | 1.107 | 1.139 | 1.127 |
| 52. | .926 | V1 | 1.135 | V2 | 1.127 | V3 | 1.127 | V4 | 1.119 | V5 | 1.107 | 1.135 | 1.127 |
| 54. | .188 | V1 | 1.130 | V2 | 1.120 | V3 | 1.120 | V4 | 1.111 | V5 | 1.100 | 1.130 | 1.120 |
| 56. | .432 | V1 | 1.125 | V2 | 1.116 | V3 | 1.116 | V4 | 1.108 | V5 | 1.094 | 1.125 | 1.116 |
| 58. | .668 | V1 | 1.116 | V2 | 1.109 | V3 | 1.109 | V4 | 1.101 | V5 | 1.082 | 1.116 | 1.109 |
| 60. | .884 | V1 | 1.109 | V2 | 1.101 | V3 | 1.101 | V4 | 1.093 | V5 | 1.074 | 1.109 | 1.101 |
| 62. | .075 | V1 | 1.101 | V2 | 1.093 | V3 | 1.093 | V4 | 1.085 | V5 | 1.066 | 1.101 | 1.093 |
| 64. | .242 | V1 | 1.093 | V2 | 1.085 | V3 | 1.085 | V4 | 1.077 | V5 | 1.058 | 1.093 | 1.085 |
| | | | 1.085 | V2 | 1.077 | V3 | 1.077 | V4 | 1.069 | V5 | 1.050 | 1.085 | 1.077 |
| | | | 1.077 | V2 | 1.069 | V3 | 1.069 | V4 | 1.061 | V5 | 1.042 | 1.077 | 1.069 |
| | | | 1.069 | V2 | 1.061 | V3 | 1.061 | V4 | 1.053 | V5 | 1.034 | 1.069 | 1.061 |
| | | | 1.061 | V2 | 1.053 | V3 | 1.053 | V4 | 1.045 | V5 | 1.026 | 1.061 | 1.053 |
| | | | 1.053 | V2 | 1.045 | V3 | 1.045 | V4 | 1.037 | V5 | 1.018 | 1.053 | 1.045 |
| | | | 1.045 | V2 | 1.037 | V3 | 1.037 | V4 | 1.029 | V5 | 1.010 | 1.045 | 1.037 |
| | | | 1.037 | V2 | 1.029 | V3 | 1.029 | V4 | 1.021 | V5 | 1.002 | 1.037 | 1.029 |
| | | | 1.029 | V2 | 1.021 | V3 | 1.021 | V4 | 1.013 | V5 | 0.994 | 1.029 | 1.021 |
| | | | 1.021 | V2 | 1.013 | V3 | 1.013 | V4 | 1.005 | V5 | 0.986 | 1.021 | 1.013 |
| | | | 1.013 | V2 | 1.005 | V3 | 1.005 | V4 | 0.997 | V5 | 0.978 | 1.013 | 1.005 |
| | | | 1.005 | V2 | 0.997 | V3 | 0.997 | V4 | 0.989 | V5 | 0.970 | 1.005 | 0.997 |
| | | | 0.997 | V2 | 0.989 | V3 | 0.989 | V4 | 0.981 | V5 | 0.962 | 0.997 | 0.989 |
| | | | 0.989 | V2 | 0.981 | V3 | 0.981 | V4 | 0.973 | V5 | 0.954 | 0.989 | 0.981 |
| | | | 0.981 | V2 | 0.973 | V3 | 0.973 | V4 | 0.965 | V5 | 0.946 | 0.981 | 0.973 |
| | | | 0.973 | V2 | 0.965 | V3 | 0.965 | V4 | 0.957 | V5 | 0.938 | 0.973 | 0.965 |
| | | | 0.965 | V2 | 0.957 | V3 | 0.957 | V4 | 0.949 | V5 | 0.930 | 0.965 | 0.957 |
| | | | 0.957 | V2 | 0.949 | V3 | 0.949 | V4 | 0.941 | V5 | 0.922 | 0.957 | 0.949 |
| | | | 0.949 | V2 | 0.941 | V3 | 0.941 | V4 | 0.933 | V5 | 0.914 | 0.949 | 0.941 |
| | | | 0.941 | V2 | 0.933 | V3 | 0.933 | V4 | 0.925 | V5 | 0.906 | 0.941 | 0.933 |
| | | | 0.933 | V2 | 0.925 | V3 | 0.925 | V4 | 0.917 | V5 | 0.898 | 0.933 | 0.925 |
| | | | 0.925 | V2 | 0.917 | V3 | 0.917 | V4 | 0.909 | V5 | 0.890 | 0.925 | 0.917 |
| | | | 0.917 | V2 | 0.909 | V3 | 0.909 | V4 | 0.901 | V5 | 0.882 | 0.917 | 0.909 |
| | | | 0.909 | V2 | 0.901 | V3 | 0.901 | V4 | 0.893 | V5 | 0.874 | 0.909 | 0.901 |
| | | | 0.901 | V2 | 0.893 | V3 | 0.893 | V4 | 0.885 | V5 | 0.866 | 0.901 | 0.893 |
| | | | 0.893 | V2 | 0.885 | V3 | 0.885 | V4 | 0.877 | V5 | 0.858 | 0.893 | 0.885 |
| | | | 0.885 | V2 | 0.877 | V3 | 0.877 | V4 | 0.869 | V5 | 0.850 | 0.885 | 0.877 |
| | | | 0.877 | V2 | 0.869 | V3 | 0.869 | V4 | 0.861 | V5 | 0.842 | 0.877 | 0.869 |
| | | | 0.869 | V2 | 0.861 | V3 | 0.861 | V4 | 0.853 | V5 | 0.834 | 0.869 | 0.861 |
| | | | 0.861 | V2 | 0.853 | V3 | 0.853 | V4 | 0.845 | V5 | 0.826 | 0.861 | 0.853 |
| | | | 0.853 | V2 | 0.845 | V3 | 0.845 | V4 | 0.837 | V5 | 0.818 | 0.853 | 0.845 |
| | | | 0.845 | V2 | 0.837 | V3 | 0.837 | V4 | 0.829 | V5 | 0.810 | 0.845 | 0.837 |
| | | | 0.837 | V2 | 0.829 | V3 | 0.829 | V4 | 0.821 | V5 | 0.802 | 0.837 | 0.829 |
| | | | 0.829 | V2 | 0.821 | V3 | 0.821 | V4 | 0.813 | V5 | 0.794 | 0.829 | 0.821 |
| | | | 0.821 | V2 | 0.813 | V3 | 0.813 | V4 | 0.805 | V5 | 0.786 | 0.821 | 0.813 |
| | | | 0.813 | V2 | 0.805 | V3 | 0.805 | V4 | 0.797 | V5 | 0.778 | 0.813 | 0.805 |
| | | | 0.797 | V2 | 0.797 | V3 | 0.797 | V4 | 0.789 | V5 | 0.770 | 0.797 | 0.789 |
| | | | 0.789 | V2 | 0.789 | V3 | 0.789 | V4 | 0.781 | V5 | 0.762 | 0.789 | 0.781 |
| | | | 0.781 | V2 | 0.781 | V3 | 0.781 | V4 | 0.773 | V5 | 0.754 | 0.781 | 0.773 |
| | | | 0.773 | V2 | 0.773 | V3 | 0.773 | V4 | 0.765 | V5 | 0.746 | 0.773 | 0.765 |
| | | | 0.765 | V2 | 0.765 | V3 | 0.765 | V4 | 0.757 | V5 | 0.738 | 0.765 | 0.757 |
| | | | 0.757 | V2 | 0.757 | V3 | 0.757 | V4 | 0.749 | V5 | 0.730 | 0.757 | 0.749 |
| | | | 0.749 | V2 | 0.749 | V3 | 0.749 | V4 | 0.741 | V5 | 0.722 | 0.749 | 0.741 |
| | | | 0.741 | V2 | 0.741 | V3 | 0.741 | V4 | 0.733 | V5 | 0.714 | 0.741 | 0.733 |
| | | | 0.733 | V2 | 0.733 | V3 | 0.733 | V4 | 0.725 | V5 | 0.706 | 0.733 | 0.725 |
| | | | 0.725 | V2 | 0.725 | V3 | 0.725 | V4 | 0.717 | V5 | 0.698 | 0.725 | 0.717 |
| | | | 0.717 | V2 | 0.717 | V3 | 0.717 | V4 | 0.709 | V5 | 0.690 | 0.717 | 0.709 |
| | | | 0.709 | V2 | 0.709 | V3 | 0.709 | V4 | 0.701 | V5 | 0.682 | 0.709 | 0.701 |
| | | | 0.701 | V2 | 0.701 | V3 | 0.701 | V4 | 0.693 | V5 | 0.674 | 0.701 | 0.693 |
| | | | 0.693 | V2 | 0.693 | V3 | 0.693 | V4 | 0.685 | V5 | 0.666 | 0.693 | 0.685 |
| | | | 0.685 | V2 | 0.685 | V3 | 0.685 | V4 | 0.677 | V5 | 0.658 | 0.685 | 0.677 |
| | | | 0.677 | V2 | 0.677 | V3 | 0.677 | V4 | 0.669 | V5 | 0.650 | 0.677 | 0.669 |
| | | | 0.669 | V2 | 0.669 | V3 | 0.669 | V4 | 0.661 | V5 | 0.642 | 0.669 | 0.661 |
| | | | 0.661 | V2 | 0.661 | V3 | 0.661 | V4 | 0.653 | V5 | 0.634 | 0.661 | 0.653 |
| | | | 0.653 | V2 | 0.653 | V3 | 0.653 | V4 | 0.645 | V5 | 0.626 | 0.653 | 0.645 |
| | | | 0.645 | V2 | 0.645 | V3 | 0.645 | V4 | 0.637 | V5 | 0.618 | 0.645 | 0.637 |
| | | | 0.637 | V2 | 0.637 | V3 | 0.637 | V4 | 0.629 | V5 | 0.610 | 0.637 | 0.629 |
| | | | 0.629 | V2 | 0.629 | V3 | 0.629 | V4 | 0.621 | V5 | 0.602 | 0.629 | 0.621 |
| | | | 0.621 | V2 | 0.621 | V3 | 0.621 | V4 | 0.613 | V5 | 0.594 | 0.621 | 0.613 |
| | | | 0.613 | V2 | 0.613 | V3 | 0.613 | V4 | 0.605 | V5 | 0.586 | 0.613 | 0.605 |
| | | | 0.605 | V2 | 0.605 | V3 | 0.605 | V4 | 0.597 | V5 | 0.578 | 0.605 | 0.597 |
| | | | 0.597 | V2 | 0.597 | V3 | 0.597 | V4 | 0.589 | V5 | 0.570 | 0.597 | 0.589 |
| | | | 0.589 | V2 | 0.589 | V3 | 0.589 | V4 | 0.581 | V5 | 0.562 | 0.589 | 0.581 |
| | | | 0.581 | V2 | 0.581 | V3 | 0.581 | V4 | 0.573 | V5 | 0.554 | 0.581 | 0.573 |
| | | | 0.573 | V2 | 0.573 | V3 | 0.573 | V4 | 0.565 | V5 | 0.546 | 0.573 | 0.565 |
| | | | 0.565 | V2 | 0.565 | V3 | 0.565 | V4 | 0.557 | V5 | 0.538 | 0.565 | 0.557 |
| | | | 0.557 | V2 | 0.557 | V3 | 0.557 | V4 | 0.549 | V5 | 0.530 | 0.557 | 0.549 |
| | | | 0.549 | V2 | 0.549 | V3 | 0.549 | V4 | 0.541 | V5 | 0.522 | 0.549 | 0.541 |
| | | | 0.541 | V2 | 0.541 | V3 | 0.541 | V4 | 0.533 | V5 | 0.514 | 0.541 | 0.533 |
| | | | 0.533 | V2 | 0.533 | V3 | 0.533 | V4 | 0.525 | V5 | 0.506 | 0.533 | 0.525 |
| | | | 0.525 | V2 | 0.525 | V3 | 0.525 | V4 | 0.517 | V5 | 0.498 | 0.525 | 0.517 |
| | | | 0.517 | V2 | 0.517 | V3 | 0.517 | V4 | 0.509 | V5 | 0.490 | 0.517 | 0.509 |
| | | | 0.509 | V2 | 0.509 | V3 | 0.509 | V4 | 0.501 | V5 | 0.482 | 0.509 | 0.501 |
| | | | 0.501 | V2 | 0.501 | V3 | 0.501 | V4 | 0.493 | V5 | 0.474 | 0.501 | 0.493 |
| | | | 0.493</ | | | | | | | | | | |

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| PACK | DAY | AVE-CELL
V END DIS | AUX
ELECT | PRESS
END DIS | PRESS
END TRIP | AUX
ELEC | AVE-CELL
V END T | AVE-CELL
V END C | AHD | AHI | AHI-TRIP |
|------|------|-----------------------|--------------|------------------|-------------------|-------------|---------------------|---------------------|---------|---------|----------|
| 1276 | 0000 | 1.1277 | 0.0220 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 2815 | 1.2000 | 1.3000 | 0.0000 |
| 1277 | 0000 | 1.1115 | 0.0220 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 2765 | 1.9000 | 1.6000 | 0.0000 |
| 1278 | 0000 | 1.0910 | 0.0220 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 2705 | 2.4000 | 1.5000 | 0.0000 |
| 1279 | 0000 | 1.0800 | 0.0620 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 2565 | 2.9000 | 1.6000 | 0.0000 |
| 1280 | 0000 | 1.0737 | 0.0280 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3850 | 4.4000 | 7.7000 | 0.0000 |
| 1281 | 0000 | 1.0617 | 0.0080 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3875 | 4.9000 | 8.3000 | 0.0000 |
| 1282 | 0000 | 1.0585 | 0.0120 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 33902 | 4.5000 | 7.4000 | 0.0000 |
| 1283 | 0000 | 1.0400 | 0.0580 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 33307 | 5.8000 | 3.1000 | 0.0000 |
| 1284 | 0000 | 1.0485 | 0.0600 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 33935 | 6.4000 | 10.8000 | 0.0000 |
| 1285 | 0000 | 1.0455 | 0.0210 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 33945 | 7.2000 | 1.9000 | 0.0000 |
| 1286 | 0000 | 1.0810 | 0.0280 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3970 | 7.5000 | 3.3000 | 0.0000 |
| 1287 | 0000 | 1.0975 | 0.0340 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4005 | 8.4000 | 6.0000 | 0.0000 |
| 1288 | 0000 | 1.0920 | 0.1120 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4015 | 9.0000 | 3.0000 | 0.0000 |
| 1289 | 0000 | 1.0802 | 0.0800 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4105 | 8.7000 | 9.0000 | 0.0000 |
| 1290 | 0000 | 1.0800 | 0.0170 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4075 | 8.7000 | 3.0000 | 0.0000 |
| 1291 | 0000 | 1.1360 | 0.0540 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4030 | 8.7000 | 1.0000 | 0.0000 |
| 1292 | 0000 | 1.0990 | 0.0220 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4047 | 8.1000 | 1.0000 | 0.0000 |
| 1293 | 0000 | 1.0967 | 0.0280 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4042 | 7.9000 | 1.0000 | 0.0000 |
| 1294 | 0000 | 1.0900 | 0.0330 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4060 | 8.4000 | 5.0000 | 0.0000 |
| 1295 | 0000 | 1.0300 | 0.0360 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4045 | 7.9000 | 1.0000 | 0.0000 |
| 1296 | 0000 | 1.0780 | 0.0370 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4032 | 7.1000 | 1.0000 | 0.0000 |
| 1297 | 0000 | 1.0775 | 0.0380 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4032 | 6.6000 | 1.0000 | 0.0000 |
| 1298 | 0000 | 1.0705 | 0.0220 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4007 | 6.3000 | 9.0000 | 0.0000 |
| 1299 | 0000 | 1.0700 | 0.0210 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4010 | 5.8000 | 1.0000 | 0.0000 |
| 1300 | 0000 | 1.1522 | 0.0240 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4000 | 4.9000 | 9.0000 | 0.0000 |
| 1301 | 0000 | 1.1685 | 0.0210 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3997 | 4.4000 | 7.2000 | 0.0000 |
| 1302 | 0000 | 1.1762 | 0.0230 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3880 | 3.3000 | 6.3000 | 0.0000 |
| 1303 | 0000 | 1.1882 | 0.0150 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3990 | 3.9000 | 6.5000 | 0.0000 |
| 1304 | 0000 | 1.1937 | 0.0040 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3972 | 2.4000 | 5.0000 | 0.0000 |
| 1305 | 0000 | 1.1987 | 0.0210 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3972 | 4.0000 | 9.0000 | 0.0000 |
| 1306 | 0000 | 1.1747 | 0.0210 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3702 | 2.0100 | 0.4800 | 0.0000 |
| 1307 | 0000 | 1.1247 | 0.0020 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4010 | 4.2160 | 0.0000 | 0.0000 |
| 1308 | 0000 | 1.1272 | 0.0210 | 0.0000 | 0.0070 | 0.0000 | 0.0000 | 4062 | 2.5450 | 9.2800 | 0.0000 |
| 1309 | 0000 | 1.0847 | 0.0410 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 5227 | 5.4230 | 3.1800 | 0.0000 |
| 1310 | 0000 | 1.0905 | 0.0530 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3960 | 6.2310 | 6.4260 | 0.0000 |
| 1311 | 0000 | 1.0300 | 0.0550 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 5077 | 6.4500 | 6.7030 | 0.0000 |
| 1312 | 0000 | 1.0895 | 0.0470 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6415 | 6.8210 | 6.9360 | 0.0000 |
| 1313 | 0000 | 1.0817 | 0.0470 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4410 | 6.9070 | 7.3440 | 0.0000 |
| 1314 | 0000 | 1.0722 | 0.0630 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4997 | 7.1440 | 5.2880 | 0.0000 |
| 1315 | 0000 | 1.0310 | 0.0510 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4882 | 7.1060 | 3.2760 | 0.0000 |
| 1316 | 0000 | 1.0247 | 0.0520 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3870 | 7.0690 | 7.3220 | 0.0000 |
| 1317 | 0000 | 1.0227 | 0.0460 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3395 | 7.1000 | 7.0000 | 0.0000 |
| 1318 | 0000 | 1.0977 | 0.0470 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3760 | 6.8100 | 6.3570 | 0.0000 |
| 1319 | 0000 | 1.0702 | 0.0500 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3480 | 6.5210 | 7.1960 | 0.0000 |
| 1320 | 0000 | 1.0825 | 0.0490 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3650 | 6.3440 | 6.1400 | 0.0000 |
| 1321 | 0000 | 1.0777 | 0.0510 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4390 | 6.51010 | 7.0000 | 0.0000 |
| 1322 | 0000 | 1.0955 | 0.0290 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3642 | 5.9800 | 5.1790 | 0.0000 |
| 1323 | 0000 | 1.0800 | 0.0290 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4987 | 5.0000 | 6.0470 | 0.0000 |
| 1324 | 0000 | 1.0897 | 0.0180 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 5010 | 5.9690 | 6.0950 | 0.0000 |
| 1325 | 0000 | 1.0957 | 0.0350 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 5010 | 5.8360 | 9.0400 | 0.0000 |
| 1326 | 0000 | 1.0952 | 0.0480 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4725 | 5.8000 | 6.0000 | 0.0000 |
| 1327 | 0000 | 1.0992 | 0.0270 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4730 | 5.8000 | 6.2000 | 0.0000 |
| 1328 | 0000 | 1.0866 | 0.0470 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4410 | 5.5000 | 7.710 | 0.0000 |
| 1329 | 0000 | 1.0707 | 0.0730 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4692 | 5.4000 | 5.0000 | 0.0000 |
| 1330 | 0000 | 1.0407 | 0.0240 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4972 | 5.6000 | 5.0000 | 0.0000 |
| 1331 | 0000 | 1.0890 | 0.0540 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 5212 | 5.2000 | 7.0000 | 0.0000 |
| 1332 | 0000 | 1.0960 | 0.0430 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 5212 | 5.7000 | 0.0000 | 0.0000 |
| 1333 | 0000 | 1.0970 | 0.0310 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4462 | 5.6000 | 5.7000 | 0.0000 |
| 1334 | 0000 | 1.0947 | 0.0270 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6740 | 1.9000 | 2.0000 | 0.0000 |
| 1335 | 0000 | 1.0910 | 0.0340 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 3885 | 2.1000 | 3.0000 | 0.0000 |
| 1336 | 0000 | 1.1900 | 0.0190 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4450 | 3.2000 | 3.8000 | 0.0000 |
| 1337 | 0000 | 1.1252 | 0.0100 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 5550 | 4.9000 | 5.0000 | 0.0000 |
| 1338 | 0000 | 1.1202 | 0.0090 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6945 | 5.4000 | 5.6000 | 0.0000 |
| 1339 | 0000 | 1.0485 | 0.0120 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 6850 | 6.2000 | 5.5000 | 0.0000 |
| 1340 | 0000 | 1.0125 | 0.0180 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 5335 | 6.9000 | 7.5000 | 0.0000 |
| 1341 | 0000 | 1.0167 | 0.0020 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4155 | 7.6000 | 7.8000 | 0.0000 |
| 1342 | 0000 | 1.0222 | 0.0060 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4650 | 6.8000 | 4.8000 | 0.0000 |
| 1343 | 0000 | 1.0722 | 0.2140 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4485 | 7.6000 | 7.9000 | 0.0000 |
| 1344 | 0000 | 1.0462 | 0.0620 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4742 | 7.9000 | 7.9000 | 0.0000 |
| 1345 | 0000 | 1.0507 | 0.0630 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4840 | 8.0000 | 8.3000 | 0.0000 |
| 1346 | 0000 | 1.0350 | 0.7500 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 4995 | 8.9000 | 8.4000 | 0.0000 |
| 1347 | 0000 | 1.0210 | 0.7410 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 5182 | 7.9000 | 8.6000 | 0.0000 |
| 1348 | 0000 | 1.0315 | 0.8390 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 5212 | 8.5000 | 7.2000 | 0.0000 |
| 1349 | 0000 | 1.0375 | 0.4100 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 5082 | 8.5000 | 8.6000 | 0.0000 |
| 1350 | 0000 | 1.0347 | 0.3210 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 5837 | 8.5000 | 8.6000 | 0.0000 |
| 1351 | 0000 | 1.0347 | 0.2617 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 5842 | 8.3000 | 8.6000 | 0.0000 |
| 1352 | 0000 | 1.0575 | 0.3800 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 5842 | 8.4000 | 8.6000 | 0.0000 |
| 1353 | 0000 | 1.0812 | 0.3750 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 5850 | 7.9000 | 7.9000 | 0.0000 |
| 1354 | 0000 | 1.0812 | 0.3720 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 5897 | 7.7000 | 7.9000 | 0.0000 |
| 1355 | 0000 | 1.0812 | 0.3710 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | | | |
| 1356 | 0000 | 1.0812 | 0.3700 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | | | |

ORIGINAL PAGE IS
OF POOR QUALITY

| | | | | | | | | | | | |
|-----|-----------|--------|-------|-------|-------|-------|--------|-------|--------|--------|-------|
| 212 | 1643.0000 | .3650 | .3600 | .0000 | .0000 | .0000 | 1.5880 | .0000 | 1.6000 | 7.9000 | .0000 |
| 212 | 1644.0000 | .3850 | .3500 | .0000 | .0000 | .0000 | 1.5945 | .0000 | 7.5000 | 7.8000 | .0000 |
| 212 | 1645.0000 | .3500 | .6970 | .0000 | .0000 | .0000 | 1.5882 | .0000 | 7.6000 | 7.8000 | .0000 |
| 212 | 1646.0000 | .3525 | .3490 | .0000 | .0000 | .0000 | 1.5165 | .0000 | 7.6000 | 7.9000 | .0000 |
| 212 | 1649.0000 | .6360 | .2100 | .0000 | .0000 | .0000 | 1.6077 | .0000 | 6.5000 | 6.8000 | .0000 |
| 212 | 1650.0000 | .7777 | .1610 | .0000 | .0000 | .0000 | 1.6237 | .0000 | 6.6000 | 6.9000 | .0000 |
| 212 | 1651.0000 | .8940 | .0710 | .0000 | .0000 | .0000 | 1.627 | .0000 | 6.1000 | 6.1000 | .0000 |
| 212 | 1652.0000 | 1.9277 | .0640 | .0000 | .0000 | .0000 | 1.6257 | .0000 | 5.4000 | 5.7000 | .0000 |
| 212 | 1653.0000 | 1.0277 | .0640 | .0000 | .0000 | .0000 | 1.6260 | .0000 | 5.0000 | 5.0000 | .0000 |
| 212 | 1655.0000 | 1.1167 | .0590 | .0000 | .0000 | .0000 | 1.6265 | .0000 | 3.4000 | 3.7000 | .0000 |

WQEC/C 77-134

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| DATE | DAY | AVE-CELL
V END DIS | AUX
ELECT | PRESS
END DIS | PRESS
END TRIP | AUX
ELECT | AVE-CELL
V END T | AVE-CELL
V END C | AHO | AHI | AHI-TRIP |
|------|----------|-----------------------|--------------|------------------|-------------------|--------------|---------------------|---------------------|--------|---------|----------|
| 2 | 908.0000 | 1497 | 0740 | 0000 | 0000 | 0000 | 1.4915 | 0000 | 3.2400 | 3.4700 | 0000 |
| | 909.0000 | 1220 | 0160 | 0000 | 0000 | 0000 | 1.4890 | 0000 | 4.4500 | 4.6600 | 0000 |
| | 910.0000 | 1125 | 0260 | 0000 | 0000 | 0000 | 1.4840 | 0000 | 4.8600 | 5.1700 | 0000 |
| | 912.0000 | 0572 | 0270 | 0000 | 0000 | 0000 | 1.4840 | 0000 | 5.2000 | 5.2100 | 0000 |
| | 913.0000 | 9765 | 0330 | 0000 | 0000 | 0000 | 1.4575 | 0000 | 7.6300 | 7.9200 | 0000 |
| | 916.0000 | 9502 | 0360 | 0000 | 0000 | 0000 | 1.4542 | 0000 | 7.9600 | 7.9100 | 0000 |
| | 917.0000 | 7802 | 0370 | 0000 | 0000 | 0000 | 1.5300 | 0000 | 7.6000 | 8.4000 | 0000 |
| | 918.0000 | 3730 | 0400 | 0000 | 0000 | 0000 | 1.5267 | 0000 | 6.7400 | 8.9200 | 0000 |
| | 919.0000 | 9037 | 0380 | 0000 | 0000 | 0000 | 1.5380 | 0000 | 8.9300 | 9.1000 | 0000 |
| | 920.0000 | 8767 | 0400 | 0000 | 0000 | 0000 | 1.5265 | 0000 | 8.7700 | 7.1000 | 0000 |
| | 921.0000 | 5302 | 0410 | 0000 | 0000 | 0000 | 1.5355 | 0000 | 9.0500 | 8.0000 | 0000 |
| | 922.0000 | 3955 | 0320 | 0000 | 0000 | 0000 | 1.5477 | 0000 | 9.2000 | 9.3600 | 0000 |
| | 923.0000 | 2212 | 0280 | 0000 | 0000 | 0000 | 1.5475 | 0000 | 9.5000 | 9.7800 | 0000 |
| | 924.0000 | 2080 | 0270 | 0000 | 0000 | 0000 | 1.5395 | 0000 | 9.4300 | 10.0000 | 0000 |
| | 925.0000 | 2562 | 0300 | 0000 | 0000 | 0000 | 1.5407 | 0000 | 9.6100 | 10.4000 | 0000 |
| | 926.0000 | 3992 | 0290 | 0000 | 0000 | 0000 | 1.5240 | 0000 | 8.6100 | 8.7200 | 0000 |
| | 930.0000 | 2675 | 0270 | 0000 | 0000 | 0000 | 1.5375 | 0000 | 9.0900 | 9.1800 | 0000 |
| | 931.0000 | 1405 | 0330 | 0000 | 0000 | 0000 | 1.5610 | 0000 | 9.0100 | 9.2100 | 0000 |
| | 932.0000 | 2240 | 0200 | 0000 | 0000 | 0000 | 1.5452 | 0000 | 9.1800 | 9.2500 | 0000 |
| | 933.0000 | 5935 | 0190 | 0000 | 0000 | 0000 | 1.5490 | 0000 | 8.7800 | 8.8800 | 0000 |
| | 934.0000 | 3920 | 0300 | 0000 | 0000 | 0000 | 1.5467 | 0000 | 8.4500 | 8.9500 | 0000 |
| | 935.0000 | 6447 | 0270 | 0000 | 0000 | 0000 | 1.5362 | 0000 | 8.5300 | 8.6600 | 0000 |
| | 936.0000 | 9192 | 0250 | 0000 | 0000 | 0000 | 1.5187 | 0000 | 8.1200 | 8.2100 | 0000 |
| | 937.0000 | 9642 | 0300 | 0000 | 0000 | 0000 | 1.5600 | 0000 | 8.0400 | 8.2800 | 0000 |
| | 939.0000 | 0177 | 0250 | 0000 | 0000 | 0000 | 1.5637 | 0000 | 7.2300 | 9.2100 | 0000 |
| | 941.0000 | 0842 | 0240 | 0000 | 0000 | 0000 | 1.5715 | 0000 | 6.6500 | 6.8400 | 0000 |
| | 942.0000 | 0662 | 0220 | 0000 | 0000 | 0000 | 1.4520 | 0000 | 6.3400 | 5.6800 | 0000 |
| | 943.0000 | 1062 | 0280 | 0000 | 0000 | 0000 | 1.5260 | 0000 | 5.6400 | 4.0400 | 0000 |
| | 944.0000 | 1360 | 0250 | 0000 | 0000 | 0000 | 1.5747 | 0000 | 5.0200 | 5.2500 | 0000 |
| | 945.0000 | 1740 | 0200 | 0000 | 0000 | 0000 | 1.5815 | 0000 | 4.3100 | 4.3600 | 0000 |

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D. GE 12.0 ah (IUE)

1. Pack 228A, 5-cells

a. Cell information:

(1) The cells were manufactured for NASA, GSFC, under NASA contract number NAS-5-19584, according to the Manufacturing Control Document (MCD) 232A2222AA-54 and GSFC's specification S-761-P-6. The cells are from a lot of 175 cells procured for the International Ultraviolet Explorer (IUE) Project; but due to a change in the project requirements, were not used. The cells were identified with the manufacturer's catalog number 42B012AB21-G2 with three cells having auxiliary electrodes and four cells having pressure gauges. Details of cell design, construction, manufacturing and performance during acceptance testing by the manufacturer are summarized and reported in GSFC report X-711-16-18 of January 1976. Initial evaluation test results are contained in the NAVWPNSUPPCEN Crane Report WQEC/C 76-89 of 15 March 1976.

b. Parameters:

| | | | |
|--------------------------|-------|------------------------------|-----|
| Depth of Discharge (%) | 80 | Float/Trickle Current (amps) | .20 |
| Charge Control | AE/VL | Auxiliary Electrode*: | |
| Charge Current (amps) | 1.2 | Resistance (ohms) | 300 |
| Discharge Current (amps) | 8.0 | Trip Voltage (mv) | 150 |
| Temperature (°C) | 20 | Bandwidth (mv) | 30 |
| Voltage Limit (v/c) | 1.48 | | |

*--cells 1, 3 and 5

c. Capacity Checks: (Discharge till any cell reaches .75 volts)

| | Cell
<u>1</u> | Cell
<u>2</u> | Cell
<u>3</u> | Cell
<u>4</u> | Cell
<u>5</u> | ah
<u>out</u> |
|-------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Precycling (Figure 130) | .575 | .189 | 1.171 | .188 | 1.204 | 11.23 |
| Shadow 1 (Figure 131) | | | | | .198 | 15.78 |

| Cells scheduled for capacity checks: | <u>Shadow</u> | <u>Cells</u> |
|--------------------------------------|---------------|-----------------|
| | <u>1</u> | <u>5</u> |
| | 2 | 4,5 |
| | 3 | 5 |
| | 4 | 3,4,5 |
| | 5 | repeat sequence |

d. Test results during the Eclipse Season (Figures 132 and 133).

(1) End of Discharge Voltages: The end of discharge voltage, of cell 5, increased after its capacity check which shows the effect of it being reconditioned. The decrease in the average and low values, after the capacity check, was due to the other cells being on open circuit for 24 hours during cell 5s' capacity check.

(2) Pressure at End of Discharge and Charge: The pressures remained below 30 PSIA throughout the eclipse season.

e. Performance during Sun Period: Pack began test with an eclipse season and has completed one sun period. The pressures indicated a vacuum during this period. Following is a listing of the high average, and low cell voltage at the start and end of this period.

Sun Period

1

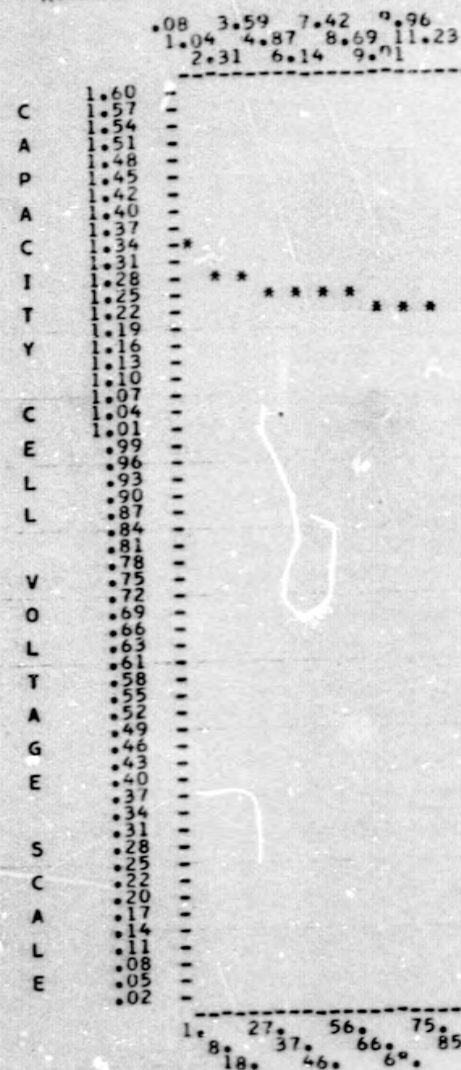
| <u>Voltages**</u> | <u>Start</u> | <u>End</u> |
|-------------------|--------------|------------|
| High | 1.416(1) | 1.407(1) |
| Average | 1.413 | 1.405 |
| Low | 1.411(2) | 1.403(4) |

**--() indicates which cell

KEY
 * HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 228A
 PRE-CYCLING
 CYCLE NUMBER IS 12.
 DISCHARGE RATE IS 8.0

WQEC/C 77-134
 AMPERE HOUR OUT



TIME IN MINUTES
 CELLS INCLUDED V4

FIGURE 130

AMPERE HOUR OUT

PACK NUMBER IS 228A
SHADOW PLOT IS 1 33.
CYCLE NUMBER IS 8.
DISCHARGE RATE IS 8.

KEY HIGH CELL
• LOW CELL
• AVERAGE

24 4.14 8.03 11.20 15.78
1.54 5.44 9.32 13.20
2.84 6.74 10.61 14.49

C 07
A 14
P 18
A 22
C 24
I 27
T 29
Y 31
C 33
E 35
L 37
L 39
V 41
O 43
L 45
T 47
A 49
G 51
E 53
S 55
C 57
A 59
L 61
E 63

1.0 30. 58. 87. 116.
20. 39. 68. 97. 106.

TIME IN MINUTES
CELLS INCLUDED V5

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FIGURE 131

KEY
 1 HIGH END DISCHARGE VOLTAGE
 2 AVE END DISCHARGE VOLTAGE
 3 LOW END DISCHARGE VOLTAGE
 * HIGH EOC
 . AVE EOC
 + LOW EOC
 Z HIGH EOT
 X AVE EOT
 Y LOW EOT

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 80
 TEMPERATURE 20 WQEC/C 77-134
 AMPERE RATE 12
 GENERAL ELECTRIC CELL 5
 PROJECT IUE
 SERIAL 091,159,088,172,094,

PACK = 228A

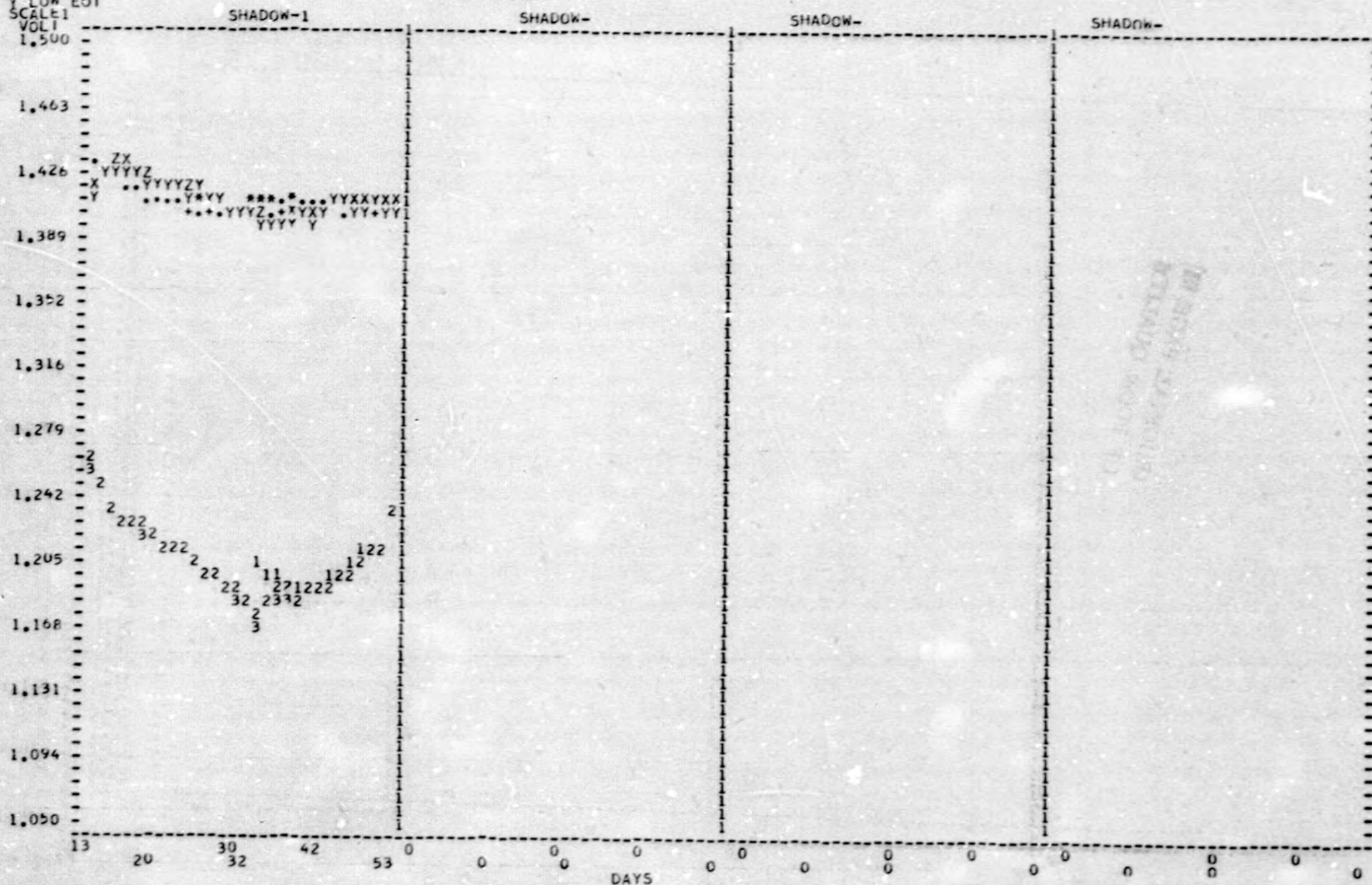


FIGURE 132

1 AHU
 2 AHU-TOTAL
 3 AHU-TOTAL

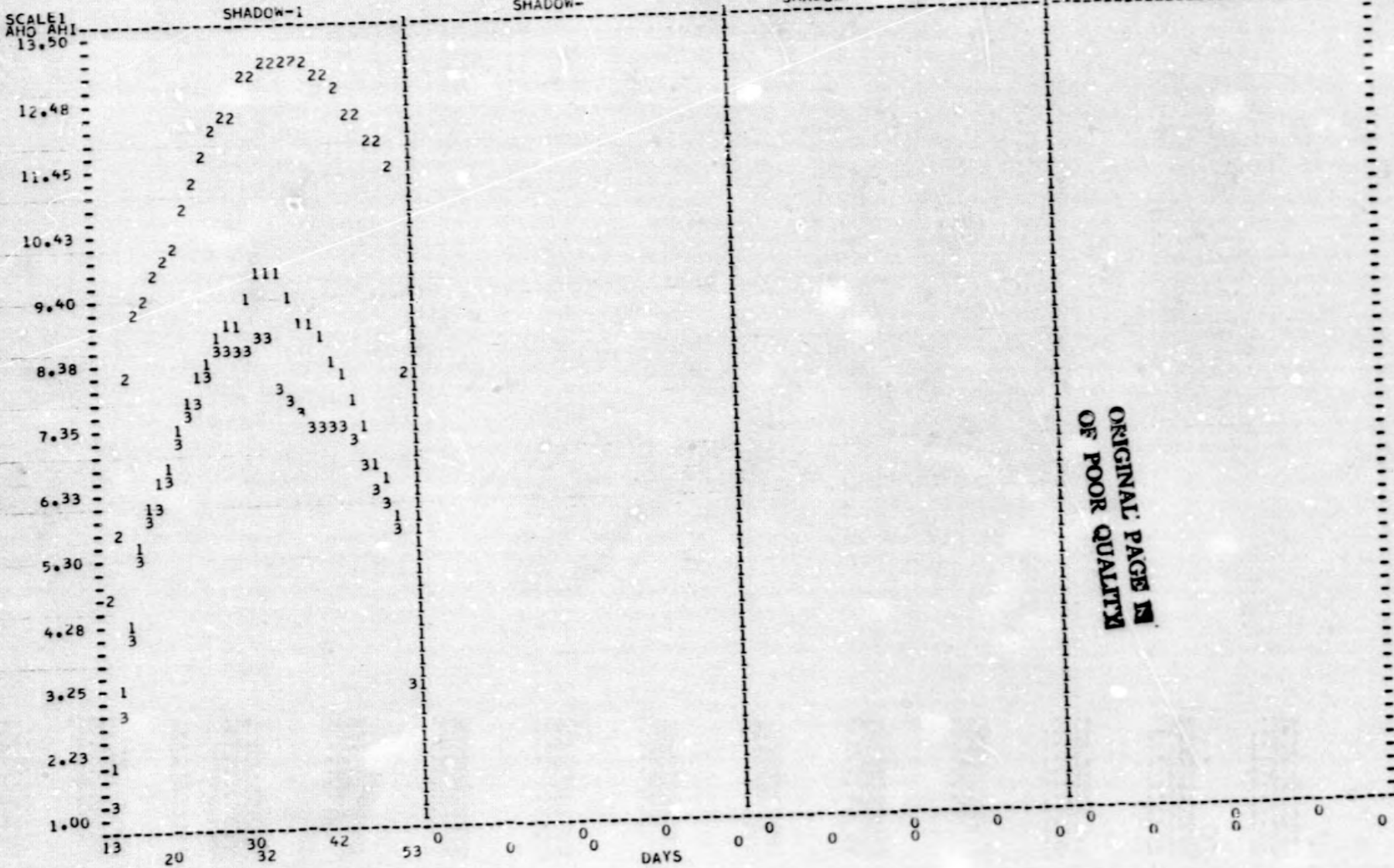
SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 80
 TEMPERATURE 20
 AMPERE RATE 12
 SERIAL 091.159.088.172.094.
 GENERAL ELECTRIC CELLS
 PROJECT IUE

WQEC/C 77-134

PACK = 228A

SCALE 1
 AHU AHU
 13.50



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FIGURE 133

DATE OF RUN IS 09/10/76

PACK NUMBER IS 228A

PRECYCLING

IS 1

CYCLE IS

12.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HTGH-V | LOW-V |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 1235. | .080 | V4 | 1.337 | .000 | .000 | .000 | .000 | .000 | .000 | 1.337 | 1.337 | 1.337 |
| 1242. | .039 | V4 | 1.292 | .000 | .000 | .000 | .000 | .000 | .000 | 1.292 | 1.292 | 1.292 |
| 1252. | .315 | V4 | 1.269 | .000 | .000 | .000 | .000 | .000 | .000 | 1.269 | 1.269 | 1.269 |
| 1301. | .591 | V4 | 1.259 | .000 | .000 | .000 | .000 | .000 | .000 | 1.259 | 1.259 | 1.259 |
| 1311. | .867 | V4 | 1.252 | .000 | .000 | .000 | .000 | .000 | .000 | 1.252 | 1.252 | 1.252 |
| 1320. | .143 | V4 | 1.245 | .000 | .000 | .000 | .000 | .000 | .000 | 1.245 | 1.245 | 1.245 |
| 1330. | .417 | V4 | 1.236 | .000 | .000 | .000 | .000 | .000 | .000 | 1.236 | 1.236 | 1.236 |
| 1340. | .689 | V4 | 1.225 | .000 | .000 | .000 | .000 | .000 | .000 | 1.225 | 1.225 | 1.225 |
| 1342. | .907 | V4 | 1.222 | .000 | .000 | .000 | .000 | .000 | .000 | 1.222 | 1.222 | 1.222 |
| 1349. | .961 | V4 | 1.211 | .000 | .000 | .000 | .000 | .000 | .000 | 1.211 | 1.211 | 1.211 |
| 1359. | 11.231 | V4 | 1.188 | .000 | .000 | .000 | .000 | .000 | .000 | 1.188 | 1.188 | 1.188 |

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E. EP 12.0 ah

1. Pack 221A, 5-cells

a. Cell information:

(1) The cells were purchased by NASA, GSFC under contract number NAS 5-16530. The cells contain auxiliary electrodes and cells 1, 3 and 5 contain pressure gauges. The cells were identified by the manufacturer as RSN-12B type cells. Acceptance test results are contained in the NAD Crane Report QEEL/C 71-366 of 8 December 1971.

(2) Two uncycled cells were sent to GSFC for analysis.

b. Parameters:

| | | | |
|--------------------------|------|----------------------|-----|
| Depth of Discharge (%) | 60 | Temperature (°C) | 20 |
| Charge Control | VL | Float Current (amps) | .20 |
| Charge Current (amps) | 1.20 | Auxiliary Electrode: | |
| Discharge Current (amps) | 6.00 | Resistance (ohms) | 20 |
| Voltage Limit (v/c) | 1.42 | | |

c. Capacity Checks: (Discharge to .50 volts any cell)

| | Cell
1 | Cell
2 | Cell
3 | Cell
4 | Cell
5 | ah
out |
|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Precycling (Figure 134) | .842 | .995 | .954 | .996 | .500 | 15.20 |
| Shadow 1 (Figure 135) | 1.048 | .995 | .464 | .927 | .539 | 16.57 |
| Shadow 2 (Figure 136) | 1.005 | .969 | .517 | .946 | .377 | 16.36 |
| Shadow 3 (Figure 137) | 1.018 | .989 | .480 | .939 | .642 | 15.52 |
| Shadow 4 (Figure 138) | .964 | .931 | .444 | .864 | .631 | 16.70 |
| Shadow 5 | .955 | .944 | .553 | .847 | .460 | 15.84 |
| Shadow 6 | 1.048 | 1.063 | 1.056 | .957 | .481 | 12.32 |
| Shadow 7 (Figure 139) | 1.053 | 1.054 | 1.045 | .963 | .498 | 11.0 |
| Shadow 8 (Figure 140) | 1.044 | 1.046 | 1.027 | .984 | .498 | 9.81 |
| Shadow 9 (Figure 141) | 1.039 | 1.033 | 1.027 | .984 | .487 | 10.06 |

d. Test results during Eclipse Seasons: (Figure 142 to 150)

(1) End of Discharge Voltages: There is a sharp decline in the low EOD voltages following shadow 5, due to cell 5. The reconditioning effect, due to the capacity checks, is present during the shadow periods except for the low EOD voltages (after shadow 5) because of cell 5. A malfunction in the control unit, prior to shadow 6, permitted the pack to be overcharged to the extent that the cell cases are slightly swollen. Also, cell 1 and 2 were found to have leaks around their negative terminals.

(2) End of Charge Voltages: The cells were unbalanced during the shadow periods, at the end of charge. This condition led to the pack's temperature increasing during the third shadow period in which the ampere-hour input and end of charge current increased while the pack voltage decreased.

(3) Ampere-Hour Input: The amount returned to the pack increases as the cell voltages become more unbalanced and also as the temperature of the pack increases due to the increasing amount of input. The difference in the ampere-hour graph for shadow 6 may be due to the cells being overcharged during the preceding sun period.

(4) Pressures at End of Charge: Pressures remained in a vacuum during the first 2 shadows; but increased to 100 psia during the middle of shadow 3, when the pack's temperature increased. The pressures have since been on a steady decline, as observed in the middle portion of the shadow periods, to where only cell 3 indicated a pressure (40 PSIA) during shadow 9.

e. Performance during Sun Periods: The pack has completed 9 sun periods as it began test with an eclipse season. The pack originally was to float at its voltage limit during these periods; but due to temperature increase during its' first period, the pack was and is now placed on a trickle charge of .2 amperes during these periods. The pressures have never exceeded 16 PSIA during the sun periods except when the cells were overcharged in period 5. Following is a listing of the high, average and low cell voltages at the start and end of each sun period.

| Sun Periods | | | | | | | | | | |
|-------------|----------|----------|----------|------------|----------|----------|----------|----------|-------|-----|
| 1 | | | 2 | | 3 | | 4 | | 8 | |
| Voltages* | Start** | End | Start | End | Start | End | Start | End | Start | End |
| High | 1.426(4) | 1.409(4) | 1.399(4) | 1.405(4) | 1.392(4) | 1.413(4) | 1.371(4) | 1.374(2) | | |
| Average | 1.422 | 1.405 | 1.392 | 1.400 | 1.384 | 1.396 | 1.352 | 1.368 | | |
| Low | 1.415(1) | 1.400(1) | 1.388(5) | 1.393(1) | 1.376(5) | 1.388(1) | 1.329(5) | 1.360(1) | | |
| 5 | | | 6 | | 7 | | 8 | | | |
| Voltages | Start | End | Start | End | Start | End | Start | End | Start | End |
| High | 1.392(4) | 1.381(1) | 1.390(4) | 1.380(4,5) | 1.386(4) | 1.380(5) | 1.392(5) | 1.382(4) | | |
| Average | 1.375 | 1.369 | 1.372 | 1.368 | 1.369 | 1.364 | 1.381 | 1.361 | | |
| Low | 1.360(5) | 1.340(3) | 1.356(5) | 1.354(2) | 1.355(5) | 1.350(3) | 1.366(3) | 1.346(2) | | |
| 9 | | | | | | | | | | |
| Voltages | Start | End | | | | | | | | |
| High | 1.406(4) | 1.388(4) | | | | | | | | |
| Average | 1.388 | 1.374 | | | | | | | | |
| Low | 1.367(2) | 1.360(2) | | | | | | | | |

*--() indicates which cell

**--values on VL float, others at .2 amps

PACK NUMBER IS 221A
 PRE-CYCLING 20 DEGREES
 CYCLE NUMBER IS 7
 DISCHARGE RATE IS 6.

WQEC/C 77-134
 AMPERE HOUR OUT

KEY
 * HIGH CELL
 + Low Cell
 * Average Cell



TIME IN MINUTES
 CELLS INCLUDED VI V2 V3 V4 V5

FIGURE 134

KEY
 * HIGH CELL
 + Low Cell
 * Average Cell

PACK NUMBER IS 221A
 SHADOW PERIOD IS 1
 CYCLE NUMBER IS 29
 DISCHARGE RATE IS 6.0

WQEC/C 77-134

AMPERE HOUR OUT

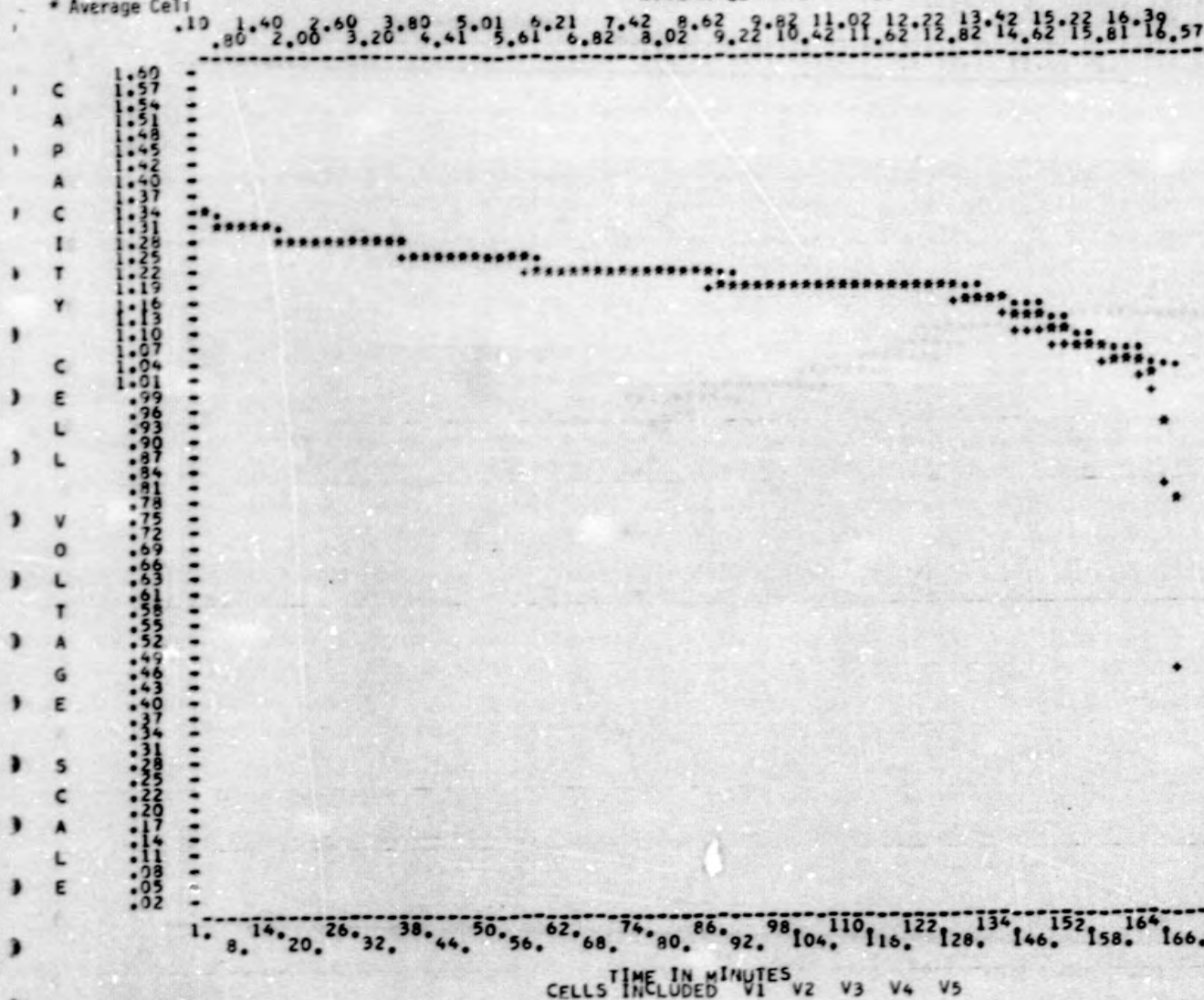


FIGURE 135

KEY: HIGH CELL
 + Low Cell
 * Average Cell

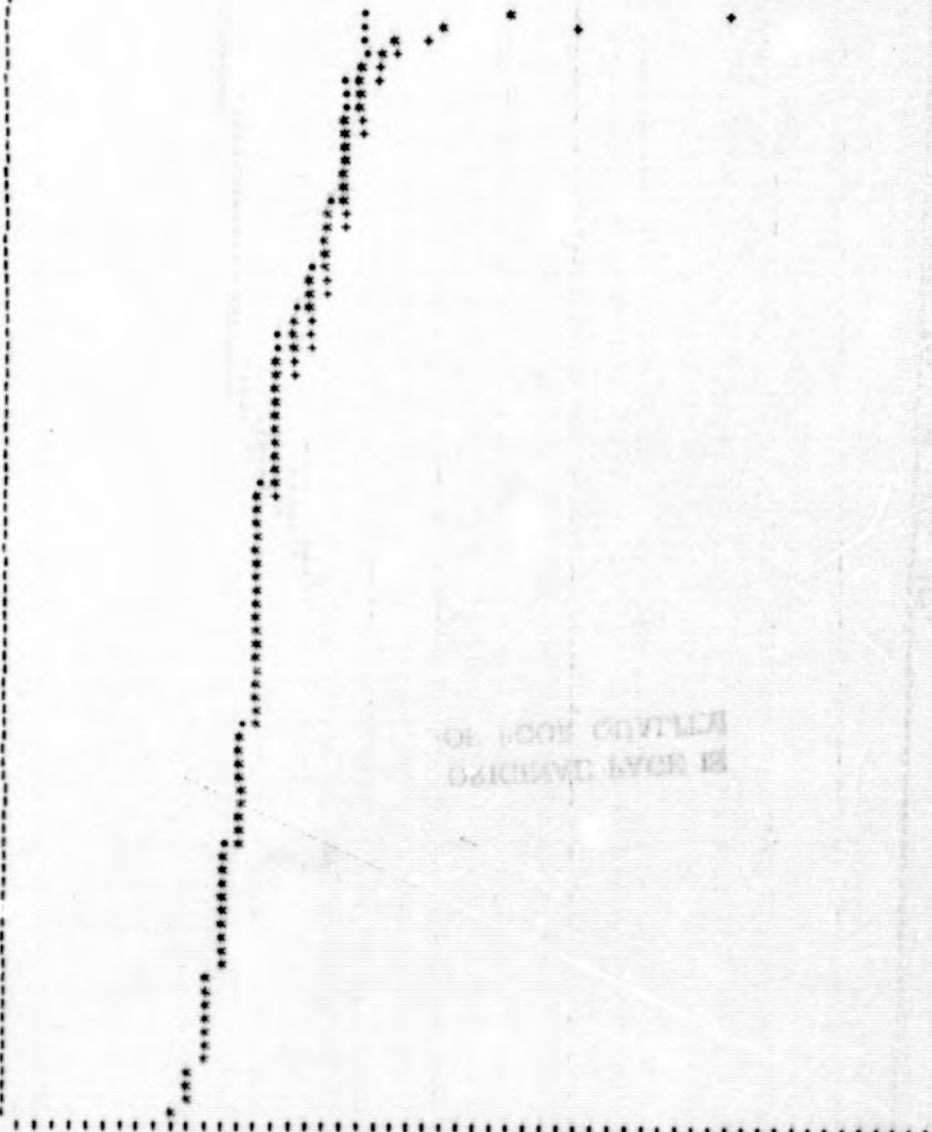
PAGE NUMBER IS 221A
 SHADOW PERIOD IS 2
 CYCLE NUMBER IS 211
 DISCHARGE RATE IS 6.0

WQEC/C 77-134

AMPERE HOUR OUT

1.40 2.00 2.60 3.80 5.00 6.20 7.30 8.50 9.70 10.90 12.10 13.30 14.50 15.70 16.90
 .80 2.00 3.20 4.40 5.60 6.80 8.00 9.20 10.40 11.60 12.80 14.00 15.20 16.40 17.60

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1. 14. 20. 26. 32. 38. 44. 50. 56. 62. 68. 74. 80. 86. 92. 98. 104. 110. 116. 122. 128. 134. 140. 146. 152. 158. 166.

TIME IN MINUTES V2 V3 V4 V5
 CELLS INCLUDED

FIGURE 136

BACK NUMBER IS 221A
 SHOWN PERIOD IS 3
 CYCLE NUMBER IS 393
 DISCHARGE RATE IS 6.

AMPERE HOUR OUT

1. 1.42 2.59 3.73 4.95 6.19 7.19 8.78 9.98 11.17 12.36 13.73 14.73 15.52
 10 1.09 3.19 4.39 5.59 6.79 7.98 9.38 10.57 11.77 12.95 14.13 15.32

KEY
 * HIGH CELL
 * Low Cell
 * Average Cell

C A P A C I T Y C E L L V O L T A G E S C A L E

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

1. 8. 14. 20. 26. 32. 38. 44. 50. 56. 62. 68. 74. 80. 86. 92. 98. 100. 106. 112. 118. 124. 130. 136. 142. 148. 154. 156.

TIME IN MINUTES V1 V2 V3 V4 V5
 CELLS INCLUDED VI

FIGURE 137

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MOEC/C 77-134

PACK NUMBER IS 221A
SHADOW PERIOD IS 4
CYCLE NUMBER IS 580
DISCHARGE RATE IS 6.

AMPERE HOUR OUT

KEY
* HIGH CELL
* LOW CELL
* AVERAGE

2. 1.70 3.15 3.33 15.49 16.70
.97 2.42 2.66 4.12 18.22

C 1.50
A 1.57
P 1.54
A 1.51
C 1.48
C 1.45
C 1.42
C 1.39
C 1.36
C 1.33
C 1.30
C 1.27
C 1.24
C 1.21
C 1.18
C 1.15
C 1.12
C 1.09
C 1.06
C 1.03
C 1.00
C 0.97
C 0.94
C 0.91
C 0.88
C 0.85
C 0.82
C 0.79
C 0.76
C 0.73
C 0.70
C 0.67
C 0.64
C 0.61
C 0.58
C 0.55
C 0.52
C 0.49
C 0.46
C 0.43
C 0.40
C 0.37
C 0.34
C 0.31
C 0.28
C 0.25
C 0.22
C 0.19
C 0.16
C 0.13
C 0.10
C 0.07
C 0.04
C 0.01
C 0.99
C 0.96
C 0.93
C 0.90
C 0.87
C 0.84
C 0.81
C 0.78
C 0.75
C 0.72
C 0.69
C 0.66
C 0.63
C 0.60
C 0.57
C 0.54
C 0.51
C 0.48
C 0.45
C 0.42
C 0.39
C 0.36
C 0.33
C 0.30
C 0.27
C 0.24
C 0.21
C 0.18
C 0.15
C 0.12
C 0.09
C 0.06
C 0.03
C 0.00

1. 8. 15. 23. 30. 32. 39. 159. 164.

TIME IN MINUTES V1 V2 V3 V4 V5
CELLS INCLUDED

FIGURE 138

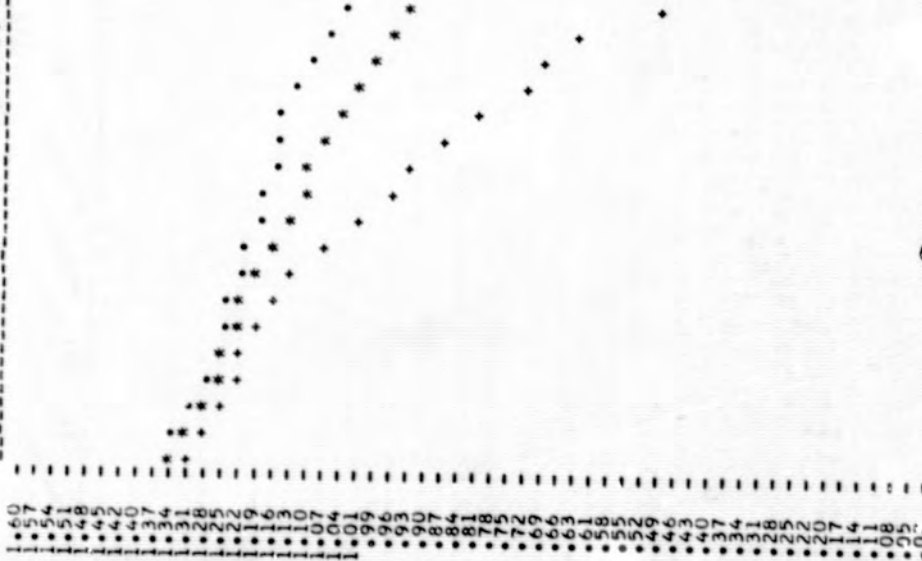
PACK NUMBER IS 821A
SHADOW PERIOD IS 13
CYCLE NUMBER IS 1312
DISCHARGE RATE IS 6.

AMPERE HOUR OUT

KEY
• HIGH CELL
+ Low Cell
* Average Cell

.23 1.27 3.98 4.08 8.19 9.83
4.7 5.7 4.68 6.79 8.89 10.29
1.17 3.28 5.48 7.49 9.60 11.00

C A P A C I T Y C E L L V O L T A G E S C A L E



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1. 3. 17. 25. 39. 46. 55. 82. 89. 99. 104.
11. 32. 47. 57. 67. 75. 87. 97. 111.

TIME IN MINUTES
CELLS INCLUDED V1 V2 V3 V4 V5

FIGURE 139

KEY
 • HIGH CELL
 + Low Cell
 * Average Cell

PACK NUMBER 15 221A
 SHADOW PERIOD 15 8
 CYCLE NUMBER 15 1591.
 DISCHARGE RATE 15 6.

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AMPERE HOUR OUT

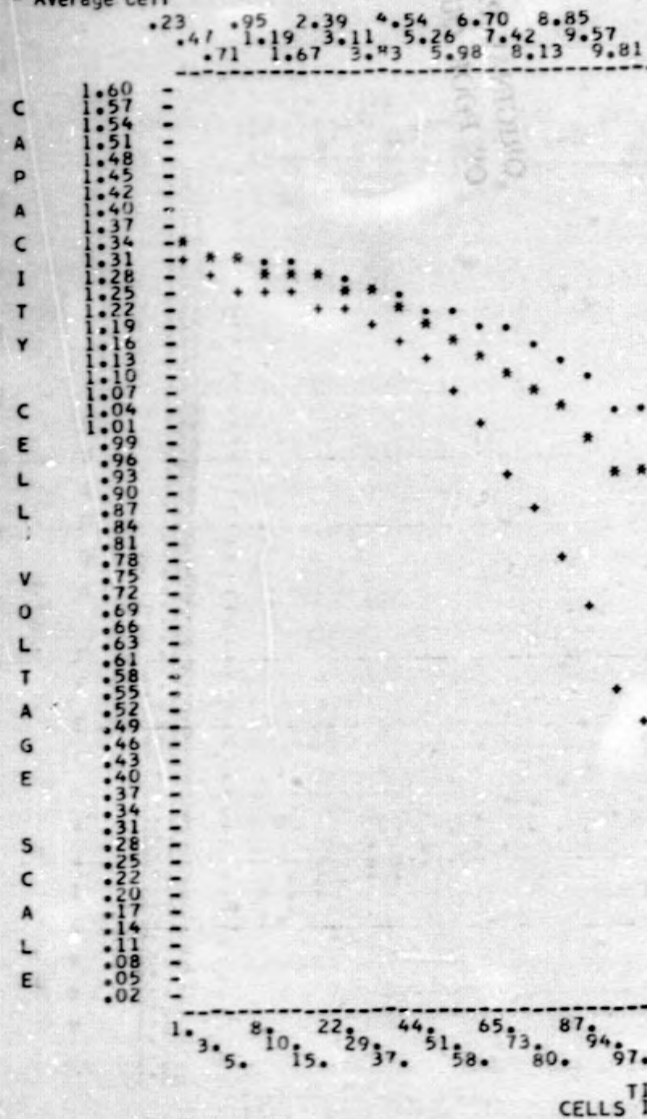


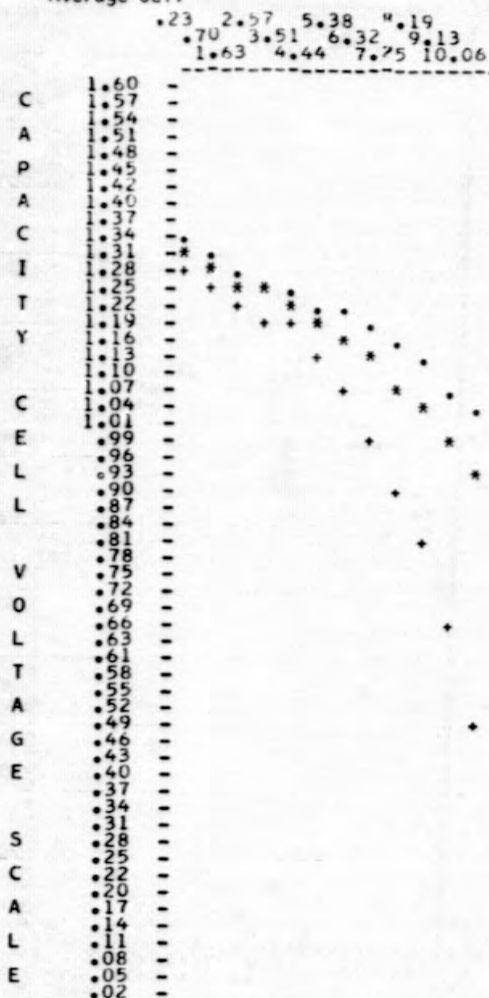
FIGURE 140

KEY
 * HIGH CELL
 + Low Cell
 * Average Cell

PACK NUMBER IS 221A
 SHADOW PERIOD IS 9
 CYCLE NUMBER IS 1773.
 DISCHARGE RATE IS 6.

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AMPERE HOUR OUT



TIME IN MINUTES
 CELLS INCLUDED V1 V2 V3 V4 V5

FIGURE 141

321

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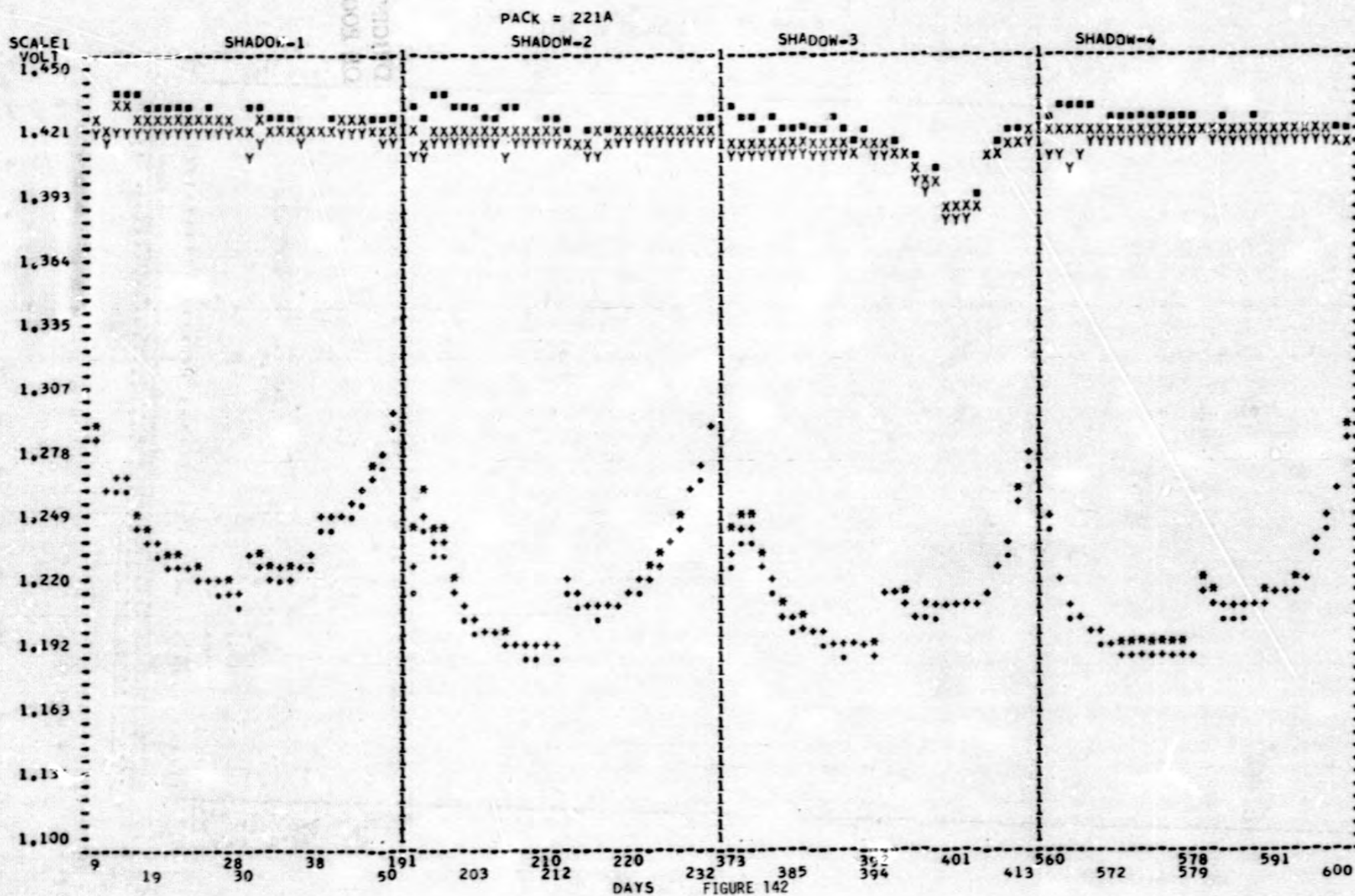
KEY
 * HIGH END DISCHARGE VOLTAGE
 + AVE END DISCHARGE VOLTAGE
 . LOW END DISCHARGE VOLTAGE
 # HIGH EOC
 X AVE EOC
 Y LOW EOC

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60
 TEMPERATURE 20
 AMPERE RATE 12
 EAGLE PITCHER CELLS

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SFRIAL 001 007 011 012 013



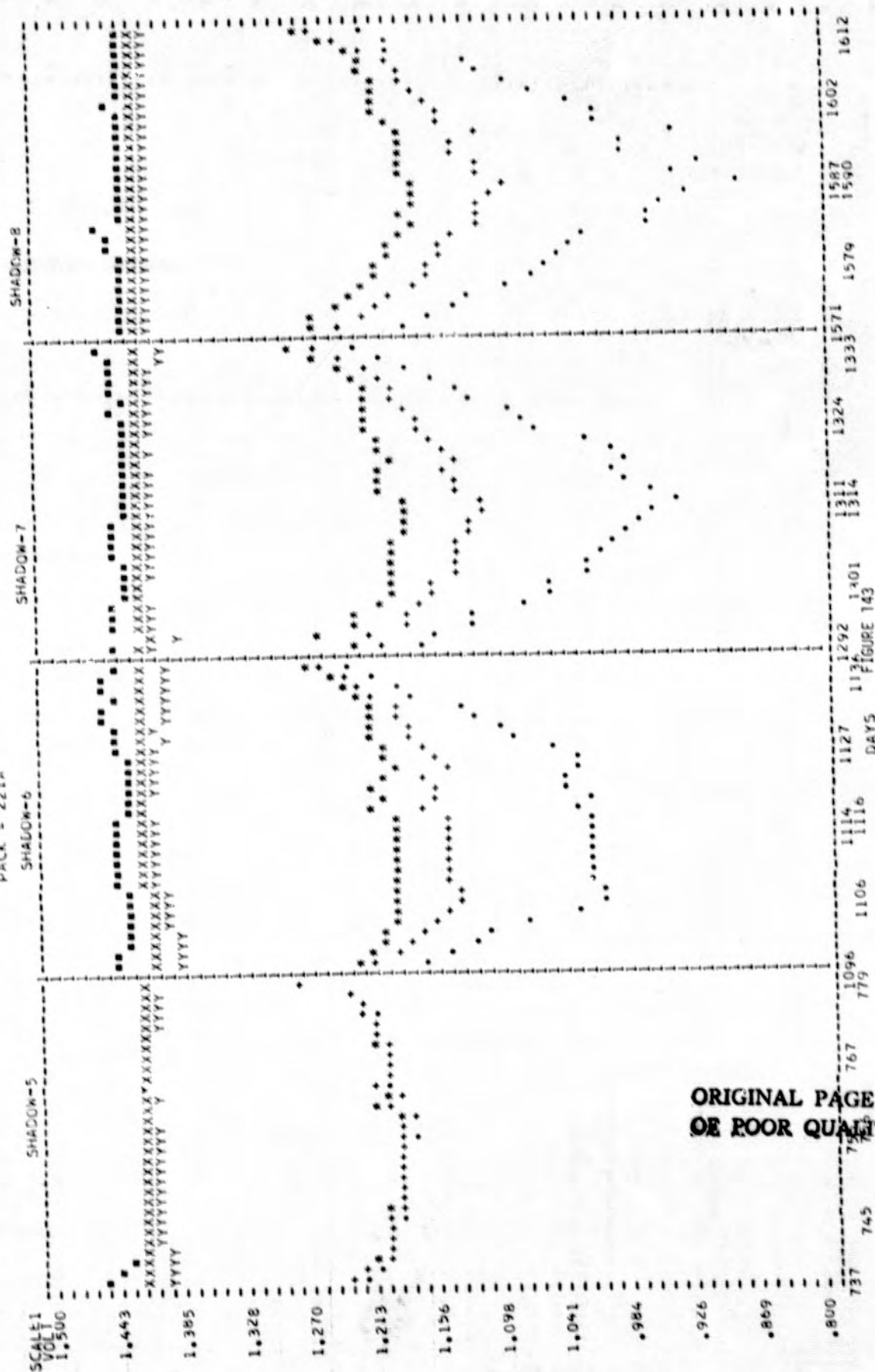
DEPTH DISCHARGE 60
TEMPERATURE 20
AMPERE RATE 12
EAGLE PITCHER CILLS

SERIAL 001 007 011 012 013

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 221A

KEY HIGH END DISCHARGE VOLTAGE
• AVE END DISCHARGE VOLTAGE
• LOW END DISCHARGE VOLTAGE
• HIGH EDC
• X AVE EDC
• Y LOW EDC



KEY
 * HIGH END DISCHARGE VOLTAGE
 + AVL END DISCHARGE VOLTAGE
 • LOW END DISCHARGE VOLTAGE
 x HIGH EOC
 X AVE EOC
 Y LOW EOC

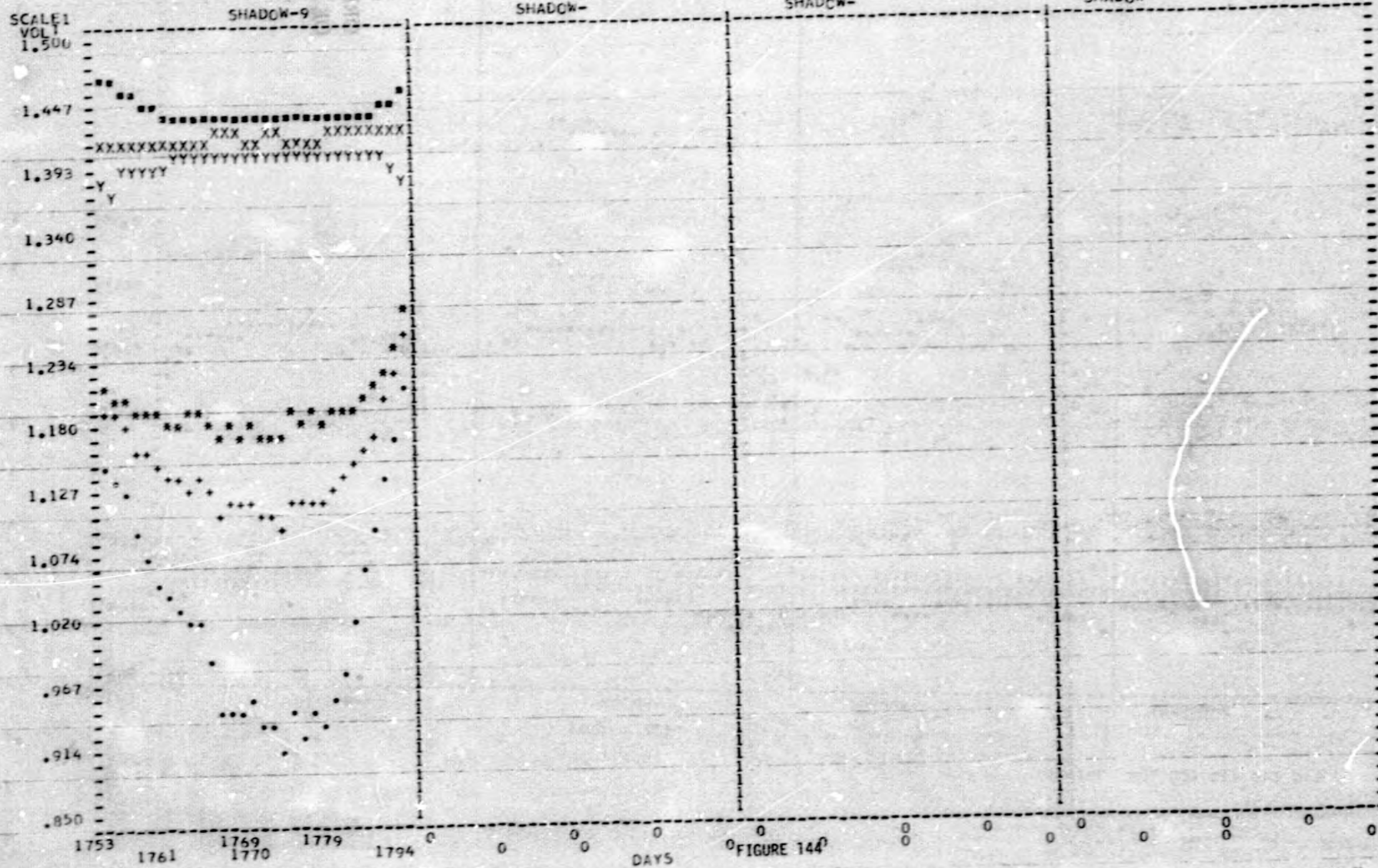
SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60
 TEMPERATURE 20
 AMPERE RATE 12
 EAGLE PITCHER CELLS

WQEC/C 77-134

SERIAL 001 007 011 012 013

PACK = 221A



KEY
 * AHO
 * AHI-TOTAL

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60
 TEMPERATURE 20
 AMPERE RATE 12
 EAGLE PITCHER CELLS
 SERIAL 001 007 011 012 013

WQEC/C 77-134

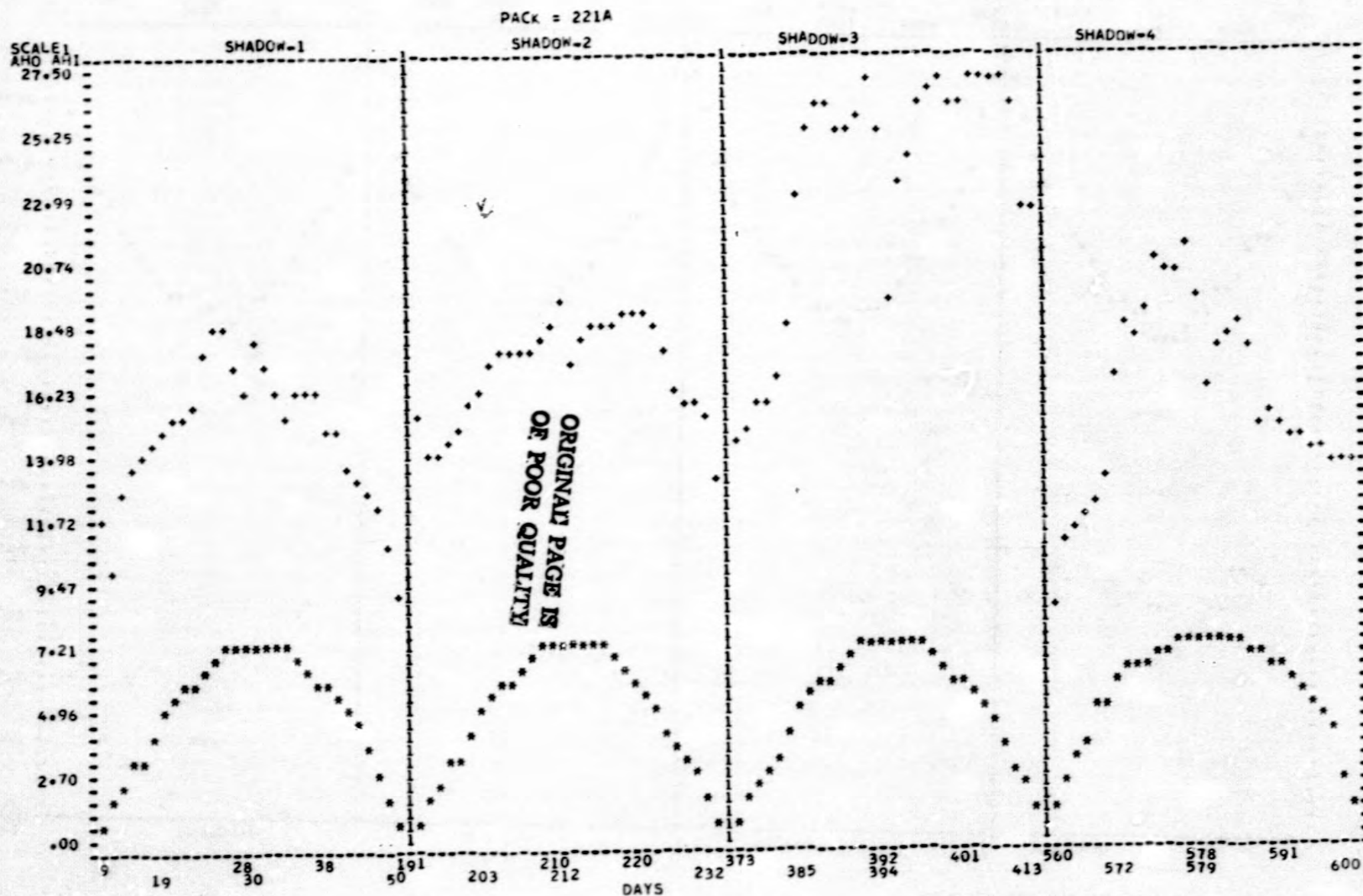


FIGURE 145

WQEC/C 77-134
 DEPTH DISCHARGE 60
 TEMPERATURE 20
 AMPERE RATE 12
 EAGLE PITCHER CFL'S
 SERIAL 001 007 011 012 013

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 221A

KEY
 * AHD
 + AHI-TOTAL

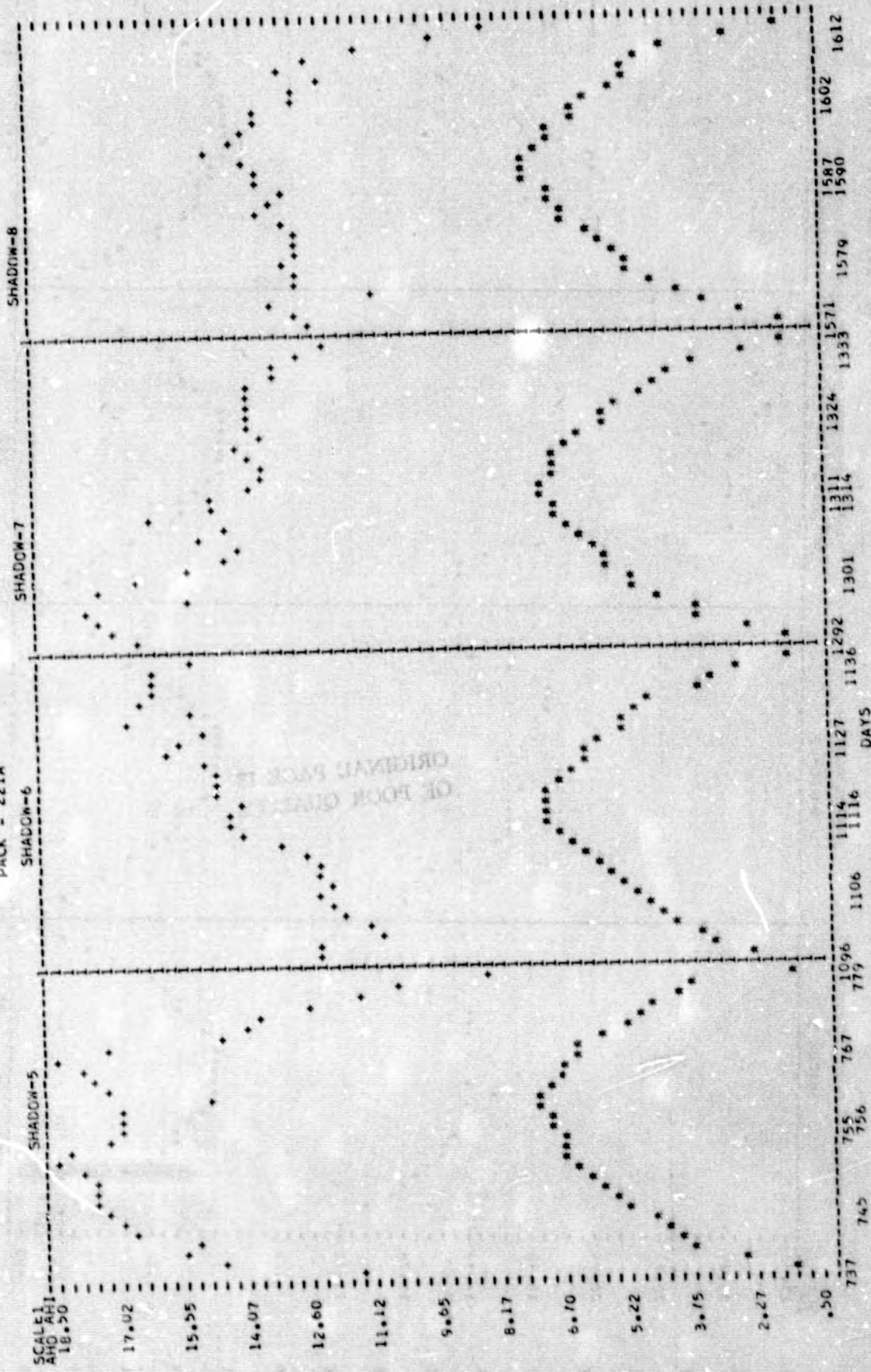


FIGURE 146

KEY
* END CHARGE CURRENT

SYNCHRONOUS ORBIT SHADOW PLOT

WQEC/C 77-134
DEPTH DISCHARGE 60
TEMPERATURE 20
AMPERE RATE 12
SERIAL 001 007 011 012 013

EAGLE PITCHER CELLS

PACK = 221A

SCALE
CURR
1.200

SHADOW-1

SHADOW-2

SHADOW-3

SHADOW-4

1.200

1.122

1.044

.966

.889

.811

.733

.655

.577

.499

.421

.343

.250

9

19

28

30

38

50

191

203

212

216

220

232

273

373

385

392

394

401

413

560

572

578

591

600

DAYS

FIGURE 148

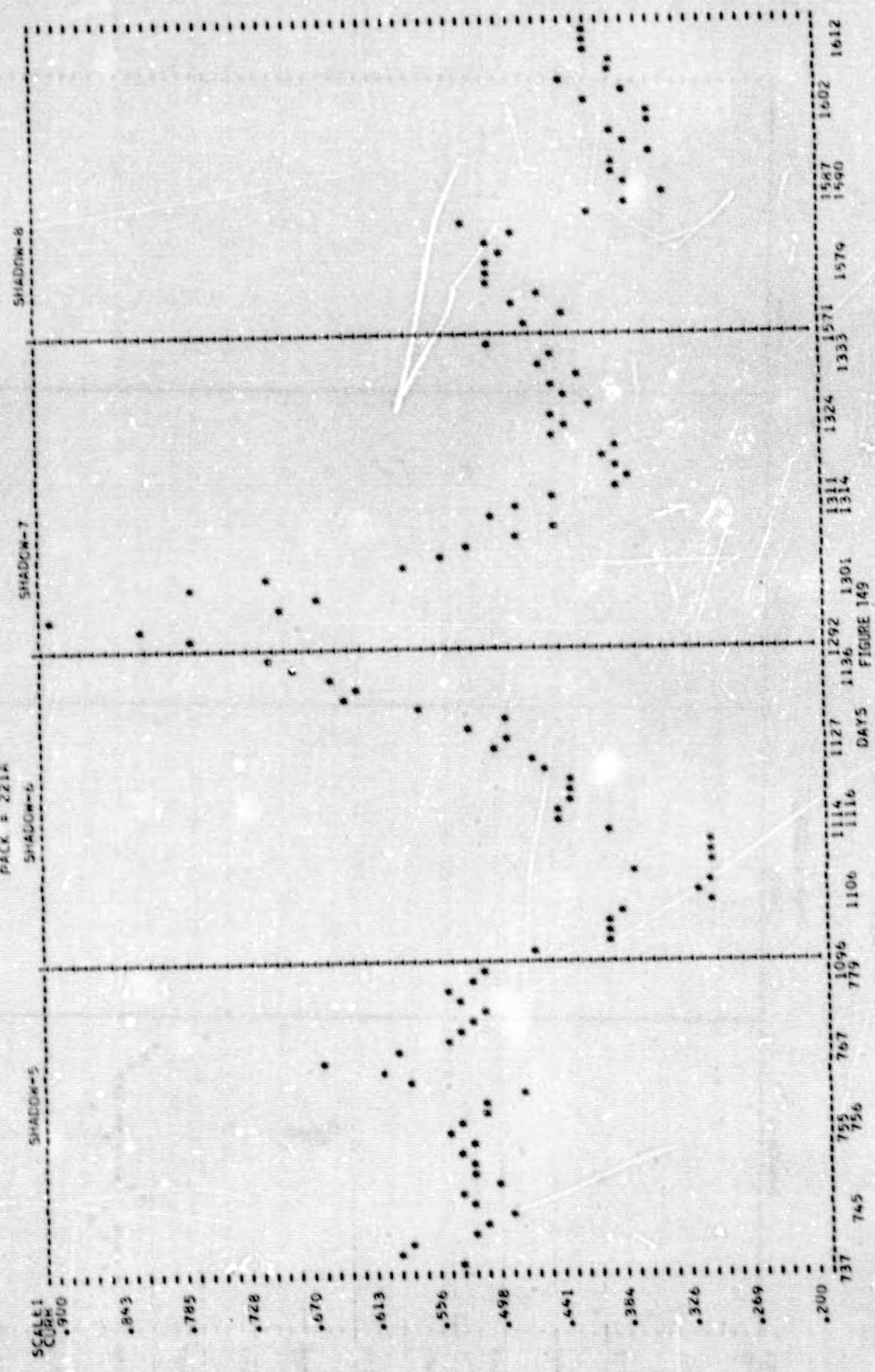
DEPTH DISCHARGE 6.0 WQEC/C 77-134
 TEMPERATURE 20
 AMPERE RATE 12
 SERIAL 001 007 011 012 013

EAGLE PITCHER CELLS

SYNCHRONOUS ORBIT SHADOW PLOT

PACK # 221A

KEY END CHARGE CURRENT



KEY
* END CHARGE CURRENT

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60 WQEC/C 77-134
TEMPERATURE 20
AMPERE RATE 12
SERIAL 001 007 011 012 013

EAGLE PITCHER CELLS

PACK = 221A

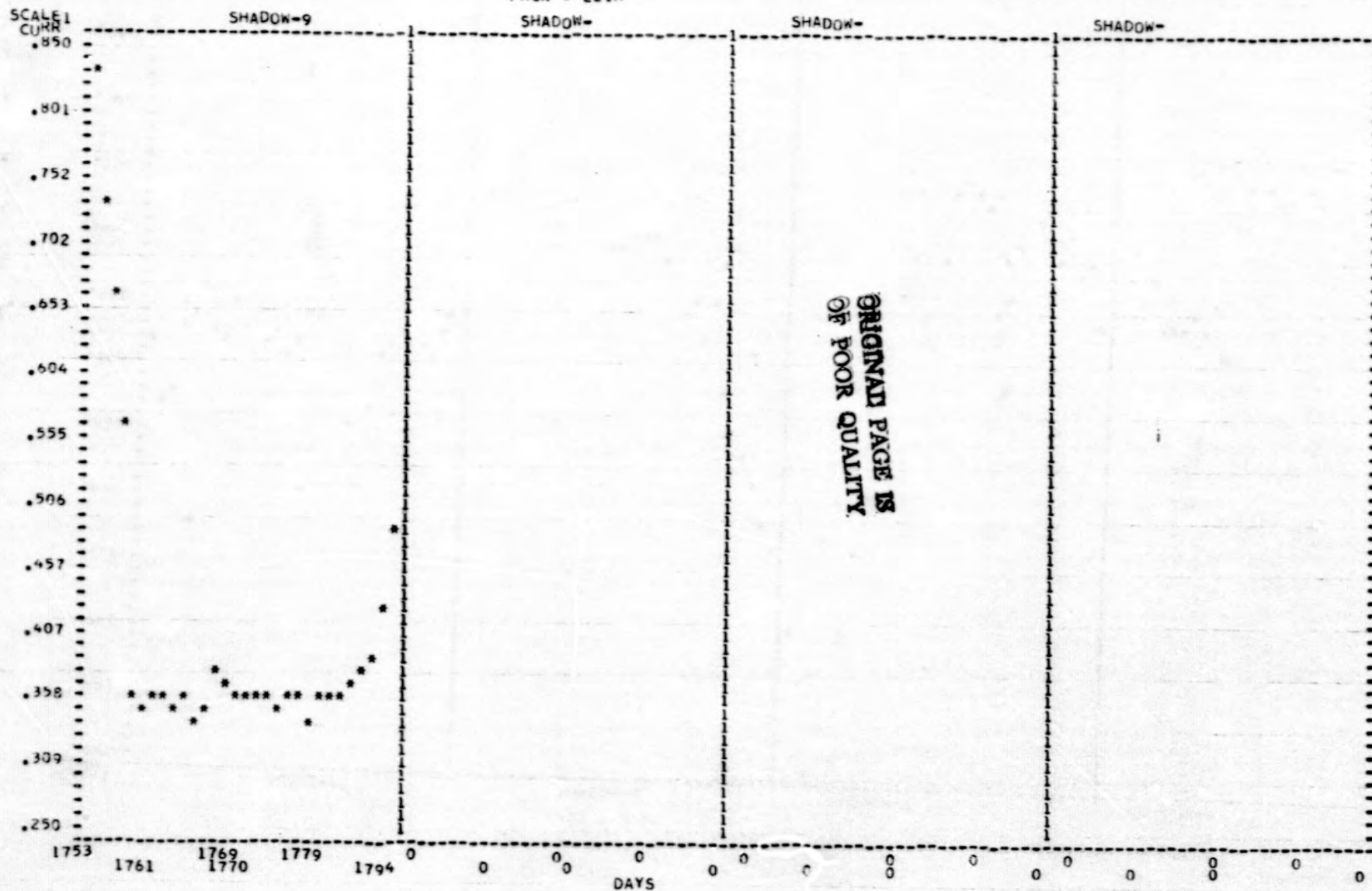


FIGURE 150

[illegible]

DATE OF 2.0 IS 09/14/76

PACK NUMBER IS 221A

SHADOW PERIOD IS 2

CYCLE IS

211.

HIGH-V

LCN-V

[illegible]

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LOW-V

HIGH-V

AVE-V

CELL-V

CELL-V

CELL-V

CELL-V

CELL-V

CELL-V

CELL-V

CELL-V

CELL-V

CELL-V

CELL-V

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ORIGINAL PAGE IS
OF POOR QUALITY

DATE OF RUN IS 11/02/76

PACK NUMBER IS 221A

SHADOW PERIOD IS 4

CYCLE IS

580.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|-------|-------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 1627. | 240 | V1 | 1 | 335 | 4 | 336 | .000 | .000 | 1.335 | 1.336 | 1.334 |
| 1629. | 480 | V1 | 1 | 321 | 4 | 321 | .000 | .000 | 1.321 | 1.321 | 1.320 |
| 1632. | 730 | V1 | 1 | 309 | 4 | 309 | .000 | .000 | 1.309 | 1.310 | 1.308 |
| 1634. | 970 | V1 | 1 | 300 | 4 | 300 | .000 | .000 | 1.300 | 1.301 | 1.299 |
| 1637. | 1240 | V1 | 1 | 293 | 4 | 293 | .000 | .000 | 1.293 | 1.294 | 1.292 |
| 1639. | 1450 | V1 | 1 | 286 | 4 | 286 | .000 | .000 | 1.286 | 1.287 | 1.285 |
| 1641. | 1600 | V1 | 1 | 280 | 4 | 280 | .000 | .000 | 1.280 | 1.281 | 1.279 |
| 1644. | 1740 | V1 | 1 | 275 | 4 | 275 | .000 | .000 | 1.275 | 1.276 | 1.274 |
| 1646. | 1940 | V1 | 1 | 270 | 4 | 270 | .000 | .000 | 1.270 | 1.271 | 1.269 |
| 1649. | 2160 | V1 | 1 | 265 | 4 | 265 | .000 | .000 | 1.265 | 1.266 | 1.264 |
| 1651. | 2420 | V1 | 1 | 260 | 4 | 260 | .000 | .000 | 1.260 | 1.261 | 1.259 |
| 1653. | 2660 | V1 | 1 | 255 | 4 | 255 | .000 | .000 | 1.255 | 1.256 | 1.254 |
| 1656. | 2900 | V1 | 1 | 251 | 4 | 251 | .000 | .000 | 1.251 | 1.252 | 1.250 |
| 1659. | 3150 | V1 | 1 | 247 | 4 | 247 | .000 | .000 | 1.247 | 1.248 | 1.246 |
| 1661. | 3390 | V1 | 1 | 243 | 4 | 243 | .000 | .000 | 1.243 | 1.244 | 1.242 |
| 1664. | 3630 | V1 | 1 | 238 | 4 | 238 | .000 | .000 | 1.238 | 1.239 | 1.237 |
| 1667. | 3880 | V1 | 1 | 233 | 4 | 233 | .000 | .000 | 1.233 | 1.234 | 1.232 |
| 1670. | 4120 | V1 | 1 | 228 | 4 | 228 | .000 | .000 | 1.228 | 1.229 | 1.227 |
| 1673. | 4370 | V1 | 1 | 223 | 4 | 223 | .000 | .000 | 1.223 | 1.224 | 1.222 |
| 1676. | 4610 | V1 | 1 | 218 | 4 | 218 | .000 | .000 | 1.218 | 1.219 | 1.217 |
| 1679. | 4860 | V1 | 1 | 213 | 4 | 213 | .000 | .000 | 1.213 | 1.214 | 1.212 |
| 1682. | 5100 | V1 | 1 | 208 | 4 | 208 | .000 | .000 | 1.208 | 1.209 | 1.207 |
| 1685. | 5350 | V1 | 1 | 203 | 4 | 203 | .000 | .000 | 1.203 | 1.204 | 1.202 |
| 1688. | 5590 | V1 | 1 | 198 | 4 | 198 | .000 | .000 | 1.198 | 1.199 | 1.197 |
| 1691. | 5840 | V1 | 1 | 193 | 4 | 193 | .000 | .000 | 1.193 | 1.194 | 1.192 |
| 1694. | 6080 | V1 | 1 | 188 | 4 | 188 | .000 | .000 | 1.188 | 1.189 | 1.187 |
| 1697. | 6330 | V1 | 1 | 183 | 4 | 183 | .000 | .000 | 1.183 | 1.184 | 1.182 |
| 1700. | 6570 | V1 | 1 | 178 | 4 | 178 | .000 | .000 | 1.178 | 1.179 | 1.177 |
| 1703. | 6820 | V1 | 1 | 173 | 4 | 173 | .000 | .000 | 1.173 | 1.174 | 1.172 |
| 1706. | 7060 | V1 | 1 | 168 | 4 | 168 | .000 | .000 | 1.168 | 1.169 | 1.167 |
| 1709. | 7300 | V1 | 1 | 163 | 4 | 163 | .000 | .000 | 1.163 | 1.164 | 1.162 |
| 1712. | 7540 | V1 | 1 | 158 | 4 | 158 | .000 | .000 | 1.158 | 1.159 | 1.157 |
| 1715. | 7780 | V1 | 1 | 153 | 4 | 153 | .000 | .000 | 1.153 | 1.154 | 1.152 |
| 1718. | 8020 | V1 | 1 | 148 | 4 | 148 | .000 | .000 | 1.148 | 1.149 | 1.147 |
| 1721. | 8260 | V1 | 1 | 143 | 4 | 143 | .000 | .000 | 1.143 | 1.144 | 1.142 |
| 1724. | 8500 | V1 | 1 | 138 | 4 | 138 | .000 | .000 | 1.138 | 1.139 | 1.137 |
| 1727. | 8740 | V1 | 1 | 133 | 4 | 133 | .000 | .000 | 1.133 | 1.134 | 1.132 |
| 1730. | 8980 | V1 | 1 | 128 | 4 | 128 | .000 | .000 | 1.128 | 1.129 | 1.127 |
| 1733. | 9220 | V1 | 1 | 123 | 4 | 123 | .000 | .000 | 1.123 | 1.124 | 1.122 |
| 1736. | 9460 | V1 | 1 | 118 | 4 | 118 | .000 | .000 | 1.118 | 1.119 | 1.117 |
| 1739. | 9700 | V1 | 1 | 113 | 4 | 113 | .000 | .000 | 1.113 | 1.114 | 1.112 |
| 1742. | 9940 | V1 | 1 | 108 | 4 | 108 | .000 | .000 | 1.108 | 1.109 | 1.107 |
| 1745. | 10180 | V1 | 1 | 103 | 4 | 103 | .000 | .000 | 1.103 | 1.104 | 1.102 |
| 1748. | 10420 | V1 | 1 | 98 | 4 | 98 | .000 | .000 | 1.098 | 1.099 | 1.097 |
| 1751. | 10660 | V1 | 1 | 93 | 4 | 93 | .000 | .000 | 1.093 | 1.094 | 1.092 |
| 1754. | 10900 | V1 | 1 | 88 | 4 | 88 | .000 | .000 | 1.088 | 1.089 | 1.087 |
| 1757. | 11140 | V1 | 1 | 83 | 4 | 83 | .000 | .000 | 1.083 | 1.084 | 1.082 |
| 1760. | 11380 | V1 | 1 | 78 | 4 | 78 | .000 | .000 | 1.078 | 1.079 | 1.077 |
| 1763. | 11620 | V1 | 1 | 73 | 4 | 73 | .000 | .000 | 1.073 | 1.074 | 1.072 |
| 1766. | 11860 | V1 | 1 | 68 | 4 | 68 | .000 | .000 | 1.068 | 1.069 | 1.067 |
| 1769. | 12100 | V1 | 1 | 63 | 4 | 63 | .000 | .000 | 1.063 | 1.064 | 1.062 |
| 1772. | 12340 | V1 | 1 | 58 | 4 | 58 | .000 | .000 | 1.058 | 1.059 | 1.057 |
| 1775. | 12580 | V1 | 1 | 53 | 4 | 53 | .000 | .000 | 1.053 | 1.054 | 1.052 |
| 1778. | 12820 | V1 | 1 | 48 | 4 | 48 | .000 | .000 | 1.048 | 1.049 | 1.047 |
| 1781. | 13060 | V1 | 1 | 43 | 4 | 43 | .000 | .000 | 1.043 | 1.044 | 1.042 |
| 1784. | 13300 | V1 | 1 | 38 | 4 | 38 | .000 | .000 | 1.038 | 1.039 | 1.037 |
| 1787. | 13540 | V1 | 1 | 33 | 4 | 33 | .000 | .000 | 1.033 | 1.034 | 1.032 |
| 1790. | 13780 | V1 | 1 | 28 | 4 | 28 | .000 | .000 | 1.028 | 1.029 | 1.027 |
| 1793. | 14020 | V1 | 1 | 23 | 4 | 23 | .000 | .000 | 1.023 | 1.024 | 1.022 |
| 1796. | 14260 | V1 | 1 | 18 | 4 | 18 | .000 | .000 | 1.018 | 1.019 | 1.017 |
| 1799. | 14500 | V1 | 1 | 13 | 4 | 13 | .000 | .000 | 1.013 | 1.014 | 1.012 |
| 1802. | 14740 | V1 | 1 | 8 | 4 | 8 | .000 | .000 | 1.008 | 1.009 | 1.007 |
| 1805. | 14980 | V1 | 1 | 3 | 4 | 3 | .000 | .000 | 1.003 | 1.004 | 1.002 |
| 1808. | 15220 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1811. | 15460 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1814. | 15700 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1817. | 15940 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1820. | 16180 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1823. | 16420 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1826. | 16660 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1829. | 16900 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1832. | 17140 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1835. | 17380 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1838. | 17620 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1841. | 17860 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1844. | 18100 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1847. | 18340 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1850. | 18580 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1853. | 18820 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1856. | 19060 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1859. | 19300 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1862. | 19540 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1865. | 19780 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1868. | 20020 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1871. | 20260 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1874. | 20500 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1877. | 20740 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1880. | 20980 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1883. | 21220 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1886. | 21460 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1889. | 21700 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1892. | 21940 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1895. | 22180 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1898. | 22420 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1901. | 22660 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1904. | 22900 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1907. | 23140 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |
| 1910. | 23380 | V1 | 1 | 0 | 4 | 0 | .000 | .000 | 1.000 | 1.001 | 1.000 |

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| DATE
BACK | OF
RUN
DAY | IS 09/14/76
HIGH | AVE-D15 | LOW-D15 | HIGH-CHAR | AVE-CHAR | LOW-CHAR | AHO | AHT |
|--------------|------------------|---------------------|---------|---------|-----------|----------|----------|-----|-----|
| 2221 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| 2221 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 |
| 2221 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 14 |
| 2221 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| 2221 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 |
| 2221 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 |
| 2221 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 |
| 2221 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 |
| 2221 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| 2221 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 |
| 2221 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 |
| 2221 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 |
| 2221 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| 2221 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 |
| 2221 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 |
| 2221 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 |
| 2221 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 |
| 2221 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |
| 2221 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 |
| 2221 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 |
| 2221 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 |
| 2221 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| 2221 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| 2221 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 |
| 2221 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 |
| 2221 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 |
| 2221 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| 2221 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 |
| 2221 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 |
| 2221 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 |
| 2221 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| 2221 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 |
| 2221 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 |
| 2221 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 |
| 2221 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 |
| 2221 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| 2221 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 |
| 2221 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 |
| 2221 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 |
| 2221 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 |
| 2221 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 |
| 2221 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 |
| 2221 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 |
| 2221 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 |
| 2221 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 69 |
| 2221 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| 2221 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 |
| 2221 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 |
| 2221 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 |
| 2221 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 |
| 2221 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 |
| 2221 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 |
| 2221 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 |
| 2221 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 |
| 2221 | 79 | 79 | 79 | 79 | 79 | 79 | 79 | 79 | 79 |
| 2221 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| 2221 | 81 | 81 | 81 | 81 | 81 | 81 | 81 | 81 | 81 |
| 2221 | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 82 |
| 2221 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 |
| 2221 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 |
| 2221 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 |
| 2221 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 |
| 2221 | 87 | 87 | 87 | 87 | 87 | 87 | 87 | 87 | 87 |
| 2221 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| 2221 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 |
| 2221 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| 2221 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 |
| 2221 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| 2221 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 |
| 2221 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| 2221 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| 2221 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| 2221 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| 2221 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 |
| 2221 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 |
| 2221 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

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DATE OF RUN IS 08/16/76
 DATA 502
 221A 600
 221A 1
 2

HIGH-DIS 1.287
 AVE-DIS 1.286
 LOW-DIS 1.286

HIGH-CHAR 1.422
 AVE-CHAR 1.418
 LOW-CHAR 1.414

HIGH-CHAR 1.423
 AVE-CHAR 1.418
 LOW-CHAR 1.414

HIGH-CHAR 1.423
 AVE-CHAR 1.418
 LOW-CHAR 1.414

HIGH-CHAR 1.423
 AVE-CHAR 1.418
 LOW-CHAR 1.414

HIGH-CHAR 1.423
 AVE-CHAR 1.418
 LOW-CHAR 1.414

HIGH-CHAR 1.423
 AVE-CHAR 1.418
 LOW-CHAR 1.414

HIGH-CHAR 1.423
 AVE-CHAR 1.418
 LOW-CHAR 1.414

HIGH-CHAR 1.423
 AVE-CHAR 1.418
 LOW-CHAR 1.414

HIGH-CHAR 1.423
 AVE-CHAR 1.418
 LOW-CHAR 1.414

HIGH-CHAR 1.423
 AVE-CHAR 1.418
 LOW-CHAR 1.414

HIGH-CHAR 1.423
 AVE-CHAR 1.418
 LOW-CHAR 1.414

ORIGINAL COPY
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| DATE OF RUN | IS | 09/14/76 |
|-------------|---------|----------|
| PACK DAY | CURRENT | |
| 2211A | 9. | .403 |
| 2211A | 11. | .423 |
| 2211A | 13. | .455 |
| 2211A | 14. | .460 |
| 2211A | 15. | .470 |
| 2211A | 17. | .471 |
| 2211A | 19. | .472 |
| 2211A | 21. | .400 |
| 2211A | 22. | .381 |
| 2211A | 23. | .440 |
| 2211A | 24. | .450 |
| 2211A | 25. | .465 |
| 2211A | 26. | .400 |
| 2211A | 27. | .353 |
| 2211A | 28. | .340 |
| 2211A | 30. | .478 |
| 2211A | 31. | .430 |
| 2211A | 32. | .400 |
| 2211A | 33. | .360 |
| 2211A | 34. | .422 |
| 2211A | 35. | .438 |
| 2211A | 36. | .371 |
| 2211A | 38. | .374 |
| 2211A | 39. | .352 |
| 2211A | 40. | .352 |
| 2211A | 42. | .353 |
| 2211A | 44. | .381 |
| 2211A | 46. | .323 |
| 2211A | 48. | .356 |
| 2211A | 50. | .316 |
| 2211A | 191. | .556 |
| 2211A | 193. | .502 |
| 2211A | 194. | .478 |
| 2211A | 195. | .468 |
| 2211A | 197. | .464 |
| 2211A | 199. | .470 |
| 2211A | 201. | .481 |
| 2211A | 203. | .524 |
| 2211A | 204. | .527 |
| 2211A | 205. | .530 |
| 2211A | 206. | .530 |
| 2211A | 207. | .531 |
| 2211A | 208. | .546 |
| 2211A | 209. | .590 |
| 2211A | 210. | .584 |
| 2211A | 212. | .540 |
| 2211A | 213. | .559 |
| 2211A | 214. | .596 |
| 2211A | 215. | .597 |
| 2211A | 216. | .598 |

ORIGINAL PAGE IS
OF POOR QUALITY

shades 1, 2, 3 & 4 ok

DATE OF RUN IS 09/14/76
PACK DAY CURRENT

| | | |
|------|------|------|
| 221A | 217. | .605 |
| 221A | 218. | .607 |
| 221A | 220. | .637 |
| 221A | 222. | .604 |
| 221A | 223. | .576 |
| 221A | 225. | .534 |
| 221A | 226. | .575 |
| 221A | 228. | .580 |
| 221A | 230. | .569 |
| 221A | 232. | .484 |
| 221A | 373. | .891 |
| 221A | 375. | .654 |
| 221A | 376. | .692 |
| 221A | 377. | .616 |
| 221A | 379. | .833 |
| 221A | 381. | .573 |
| 221A | 383. | .753 |
| 221A | 385. | .940 |
| 221A | 386. | .122 |
| 221A | 387. | .127 |
| 221A | 388. | .043 |
| 221A | 389. | .050 |
| 221A | 390. | .118 |
| 221A | 391. | .079 |
| 221A | 392. | .015 |
| 221A | 394. | .750 |
| 221A | 395. | .939 |
| 221A | 396. | .828 |
| 221A | 397. | .153 |
| 221A | 398. | .167 |
| 221A | 399. | .162 |
| 221A | 400. | .163 |
| 221A | 401. | .165 |
| 221A | 402. | .163 |
| 221A | 403. | .160 |
| 221A | 405. | .139 |
| 221A | 407. | .151 |
| 221A | 409. | .077 |
| 221A | 411. | .865 |
| 221A | 413. | .843 |
| 221A | 560. | .390 |
| 221A | 561. | .380 |
| 221A | 562. | .360 |
| 221A | 563. | .390 |
| 221A | 566. | .430 |
| 221A | 567. | .460 |
| 221A | 570. | .520 |
| 221A | 572. | .610 |
| 221A | 573. | .600 |
| 221A | 574. | .690 |

WQEC/C 77-134

DATE OF RUN IS 09/14/76
 PACK DAY CURRENT
 221A 575. .750
 221A 576. .690
 221A 577. .720
 221A 578. .630
 221A 579. .660
 221A 581. .510
 221A 582. .570
 221A 583. .590
 221A 584. .620
 221A 586. .610
 221A 588. .600
 221A 587. .520
 221A 591. .480
 221A 593. .490
 221A 594. .520
 221A 595. .570
 221A 596. .540
 221A 597. .530
 221A 599. .550
 221A 600. .540

.01557

1.20000

26.60000

.31600

121.70000

ORIGINAL PAGE IS
 OF POOR QUALITY

| DATE OF RUN
PACK DAY | IS 08/27/76
HIGH-DIS | AVE-DIS | LOW-DIS | HIGH-CHAR | AVE-CHAR | LOW-CHAR | AHO | AHI |
|-------------------------|-------------------------|---------|---------|-----------|----------|----------|-------|--------|
| 221A | 737. | 1.240 | 1.233 | 1.450 | 1.417 | 1.392 | 1.450 | 11.280 |
| 221A | 738. | 1.224 | 1.221 | 1.442 | 1.416 | 1.398 | 2.430 | 14.680 |
| 221A | 740. | 1.209 | 1.207 | 1.439 | 1.416 | 1.396 | 3.640 | 15.680 |
| 221A | 741. | 1.204 | 1.201 | 1.433 | 1.416 | 1.398 | 4.130 | 15.240 |
| 221A | 742. | 1.201 | 1.199 | 1.429 | 1.417 | 1.410 | 4.200 | 16.640 |
| 221A | 744. | 1.200 | 1.198 | 1.429 | 1.417 | 1.412 | 4.600 | 17.080 |
| 221A | 745. | 1.198 | 1.196 | 1.429 | 1.417 | 1.410 | 5.200 | 17.200 |
| 221A | 747. | 1.196 | 1.195 | 1.429 | 1.417 | 1.412 | 5.580 | 17.650 |
| 221A | 748. | 1.192 | 1.190 | 1.429 | 1.417 | 1.411 | 5.892 | 17.470 |
| 221A | 749. | 1.193 | 1.191 | 1.429 | 1.417 | 1.412 | 6.070 | 17.500 |
| 221A | 750. | 1.191 | 1.189 | 1.424 | 1.417 | 1.411 | 6.319 | 18.000 |
| 221A | 751. | 1.191 | 1.189 | 1.422 | 1.417 | 1.413 | 6.559 | 18.480 |
| 221A | 752. | 1.191 | 1.189 | 1.423 | 1.417 | 1.412 | 6.560 | 18.120 |
| 221A | 753. | 1.190 | 1.187 | 1.422 | 1.417 | 1.412 | 6.801 | 17.310 |
| 221A | 755. | 1.189 | 1.186 | 1.422 | 1.416 | 1.412 | 7.033 | 17.000 |
| 221A | 756. | 1.189 | 1.185 | 1.422 | 1.417 | 1.413 | 7.030 | 16.960 |
| 221A | 757. | 1.187 | 1.184 | 1.421 | 1.417 | 1.414 | 7.266 | 16.900 |
| 221A | 760. | 1.208 | 1.206 | 1.420 | 1.418 | 1.414 | 7.261 | 15.000 |
| 221A | 761. | 1.198 | 1.196 | 1.422 | 1.417 | 1.413 | 7.020 | 17.180 |
| 221A | 763. | 1.211 | 1.209 | 1.422 | 1.418 | 1.416 | 6.779 | 17.720 |
| 221A | 764. | 1.206 | 1.204 | 1.421 | 1.417 | 1.415 | 6.775 | 17.800 |
| 221A | 766. | 1.202 | 1.201 | 1.421 | 1.417 | 1.414 | 6.533 | 18.470 |
| 221A | 767. | 1.203 | 1.200 | 1.422 | 1.417 | 1.414 | 6.294 | 17.390 |
| 221A | 769. | 1.209 | 1.207 | 1.422 | 1.417 | 1.415 | 5.805 | 14.580 |
| 221A | 771. | 1.214 | 1.213 | 1.422 | 1.418 | 1.414 | 5.327 | 14.200 |
| 221A | 773. | 1.218 | 1.217 | 1.422 | 1.417 | 1.413 | 4.845 | 13.800 |
| 221A | 774. | 1.220 | 1.219 | 1.423 | 1.417 | 1.412 | 4.604 | 12.500 |
| 221A | 775. | 1.226 | 1.225 | 1.424 | 1.417 | 1.411 | 4.129 | 11.500 |
| 221A | 776. | 1.234 | 1.233 | 1.424 | 1.417 | 1.412 | 3.643 | 10.500 |
| 221A | 779. | 1.283 | 1.281 | 1.422 | 1.419 | 1.414 | 1.454 | 8.328 |
| 221A | 1096. | 1.229 | 1.229 | 1.437 | 1.410 | 1.389 | 2.330 | 12.250 |
| 221A | 1097. | 1.212 | 1.211 | 1.438 | 1.410 | 1.384 | 3.110 | 12.190 |
| 221A | 1098. | 1.205 | 1.203 | 1.435 | 1.410 | 1.383 | 3.590 | 10.960 |
| 221A | 1100. | 1.198 | 1.197 | 1.433 | 1.409 | 1.386 | 3.900 | 11.200 |
| 221A | 1102. | 1.194 | 1.193 | 1.432 | 1.409 | 1.393 | 4.200 | 11.700 |
| 221A | 1104. | 1.189 | 1.188 | 1.431 | 1.411 | 1.398 | 4.600 | 12.020 |
| 221A | 1105. | 1.185 | 1.184 | 1.431 | 1.411 | 1.399 | 5.000 | 12.330 |
| 221A | 1106. | 1.185 | 1.185 | 1.431 | 1.411 | 1.400 | 5.200 | 11.900 |
| 221A | 1107. | 1.191 | 1.190 | 1.443 | 1.423 | 1.407 | 5.400 | 12.300 |
| 221A | 1108. | 1.191 | 1.190 | 1.440 | 1.421 | 1.408 | 5.800 | 12.400 |
| 221A | 1109. | 1.192 | 1.191 | 1.440 | 1.422 | 1.409 | 6.100 | 12.500 |
| 221A | 1111. | 1.192 | 1.191 | 1.440 | 1.423 | 1.410 | 6.400 | 13.100 |
| 221A | 1112. | 1.193 | 1.192 | 1.440 | 1.423 | 1.410 | 6.800 | 14.140 |
| 221A | 1113. | 1.195 | 1.194 | 1.440 | 1.423 | 1.411 | 7.000 | 14.370 |
| 221A | 1114. | 1.195 | 1.194 | 1.440 | 1.423 | 1.411 | 7.000 | 14.500 |
| 221A | 1116. | 1.215 | 1.215 | 1.432 | 1.423 | 1.414 | 6.990 | 14.160 |
| 221A | 1117. | 1.206 | 1.206 | 1.430 | 1.423 | 1.416 | 7.070 | 14.810 |
| 221A | 1118. | 1.208 | 1.208 | 1.431 | 1.423 | 1.413 | 6.800 | 14.640 |
| 221A | 1120. | 1.207 | 1.207 | 1.432 | 1.422 | 1.412 | 6.400 | 14.800 |
| 221A | 1121. | 1.192 | 1.192 | 1.433 | 1.423 | 1.409 | 6.200 | 14.990 |
| 221A | 1124. | 1.202 | 1.202 | 1.435 | 1.423 | 1.406 | 6.180 | 15.780 |
| 221A | 1125. | 1.205 | 1.205 | 1.438 | 1.423 | 1.404 | 5.910 | 15.500 |
| 221A | 1127. | 1.210 | 1.210 | 1.437 | 1.422 | 1.402 | 5.120 | 15.030 |
| 221A | 1128. | 1.211 | 1.211 | 1.444 | 1.423 | 1.405 | 5.120 | 16.740 |
| 221A | 1129. | 1.208 | 1.208 | 1.449 | 1.423 | 1.397 | 4.890 | 15.220 |
| 221A | 1130. | 1.212 | 1.212 | 1.449 | 1.423 | 1.394 | 4.660 | 16.330 |
| 221A | 1133. | 1.228 | 1.228 | 1.448 | 1.422 | 1.393 | 3.490 | 16.130 |
| 221A | 1134. | 1.236 | 1.236 | 1.449 | 1.423 | 1.394 | 3.030 | 16.000 |
| 221A | 1135. | 1.250 | 1.238 | 1.210 | 1.449 | 1.402 | 2.440 | 16.070 |

WQEC/C 77-134

| DATE OF RUN | 15.08/27/76 | AVE-DIS | LOW-DIS | HIGH-CHAR | AVE-CHAR | LOW-CHAR | AHO | AHI |
|-------------|-------------|---------|---------|-----------|----------|----------|-------|--------|
| 221A | 1136. | 1.275 | 1.261 | 1.448 | 1.423 | 1.399 | 1.390 | 15.340 |
| 221A | 1292. | 1.223 | 1.166 | 1.432 | 1.423 | 1.409 | 1.467 | 16.500 |
| 221A | 1293. | 1.257 | 1.151 | 1.413 | 1.403 | 1.390 | 2.338 | 17.000 |
| 221A | 1295. | 1.221 | 1.122 | 1.440 | 1.423 | 1.405 | 3.497 | 17.200 |
| 221A | 1296. | 1.220 | 1.121 | 1.438 | 1.423 | 1.410 | 3.347 | 17.640 |
| 221A | 1297. | 1.201 | 1.079 | 1.438 | 1.424 | 1.412 | 4.409 | 15.210 |
| 221A | 1299. | 1.194 | 1.054 | 1.432 | 1.424 | 1.415 | 4.844 | 17.340 |
| 221A | 1299. | 1.195 | 1.049 | 1.432 | 1.423 | 1.415 | 4.991 | 16.500 |
| 221A | 1301. | 1.187 | 1.019 | 1.431 | 1.424 | 1.411 | 5.584 | 15.160 |
| 221A | 1302. | 1.189 | 1.014 | 1.435 | 1.424 | 1.413 | 5.639 | 14.450 |
| 221A | 1303. | 1.186 | 1.002 | 1.437 | 1.424 | 1.412 | 5.871 | 14.100 |
| 221A | 1304. | 1.185 | 1.002 | 1.438 | 1.424 | 1.410 | 6.092 | 15.060 |
| 221A | 1305. | 1.182 | 1.002 | 1.440 | 1.424 | 1.411 | 6.324 | 14.440 |
| 221A | 1307. | 1.180 | 1.000 | 1.437 | 1.424 | 1.411 | 6.558 | 16.120 |
| 221A | 1309. | 1.178 | 1.000 | 1.436 | 1.424 | 1.411 | 6.786 | 14.800 |
| 221A | 1311. | 1.176 | 1.000 | 1.435 | 1.424 | 1.411 | 7.080 | 14.760 |
| 221A | 1314. | 1.176 | 1.000 | 1.433 | 1.424 | 1.413 | 7.024 | 13.650 |
| 221A | 1315. | 1.177 | 1.000 | 1.433 | 1.424 | 1.413 | 6.788 | 13.630 |
| 221A | 1317. | 1.198 | 1.000 | 1.433 | 1.424 | 1.413 | 6.552 | 13.630 |
| 221A | 1318. | 1.187 | 1.000 | 1.432 | 1.424 | 1.415 | 6.553 | 13.700 |
| 221A | 1320. | 1.198 | 1.000 | 1.435 | 1.424 | 1.414 | 6.318 | 14.100 |
| 221A | 1321. | 1.201 | 1.017 | 1.433 | 1.424 | 1.414 | 6.082 | 13.430 |
| 221A | 1323. | 1.208 | 1.060 | 1.435 | 1.424 | 1.414 | 5.612 | 13.900 |
| 221A | 1324. | 1.209 | 1.075 | 1.436 | 1.424 | 1.414 | 5.382 | 13.870 |
| 221A | 1325. | 1.211 | 1.091 | 1.438 | 1.424 | 1.410 | 5.148 | 13.840 |
| 221A | 1327. | 1.216 | 1.125 | 1.436 | 1.425 | 1.410 | 4.680 | 13.740 |
| 221A | 1328. | 1.217 | 1.136 | 1.443 | 1.425 | 1.408 | 4.446 | 13.760 |
| 221A | 1329. | 1.225 | 1.161 | 1.438 | 1.424 | 1.406 | 3.980 | 13.320 |
| 221A | 1330. | 1.231 | 1.175 | 1.442 | 1.424 | 1.403 | 3.510 | 13.210 |
| 221A | 1332. | 1.254 | 1.206 | 1.445 | 1.425 | 1.399 | 2.343 | 12.500 |
| 221A | 1333. | 1.277 | 1.226 | 1.440 | 1.424 | 1.396 | 1.404 | 11.990 |
| 221A | 1333. | 1.261 | 1.181 | 1.436 | 1.419 | 1.409 | 1.500 | 12.260 |
| 221A | 1337. | 1.237 | 1.156 | 1.436 | 1.420 | 1.410 | 2.400 | 12.610 |
| 221A | 1337. | 1.237 | 1.133 | 1.436 | 1.420 | 1.409 | 3.120 | 13.270 |
| 221A | 1344. | 1.224 | 1.117 | 1.436 | 1.420 | 1.408 | 3.600 | 10.910 |
| 221A | 1345. | 1.209 | 1.087 | 1.436 | 1.420 | 1.409 | 4.260 | 12.710 |
| 221A | 1345. | 1.209 | 1.063 | 1.436 | 1.419 | 1.410 | 4.800 | 12.730 |
| 221A | 1345. | 1.201 | 1.051 | 1.436 | 1.420 | 1.412 | 5.040 | 12.750 |
| 221A | 1345. | 1.196 | 1.031 | 1.436 | 1.420 | 1.408 | 5.270 | 12.600 |
| 221A | 1345. | 1.193 | 1.018 | 1.436 | 1.419 | 1.411 | 5.510 | 12.650 |
| 221A | 1345. | 1.189 | 1.018 | 1.436 | 1.419 | 1.409 | 5.750 | 12.730 |
| 221A | 1345. | 1.184 | 1.018 | 1.436 | 1.419 | 1.407 | 6.470 | 12.760 |
| 221A | 1345. | 1.168 | 1.018 | 1.436 | 1.420 | 1.412 | 6.560 | 13.350 |
| 221A | 1345. | 1.175 | 1.018 | 1.436 | 1.420 | 1.413 | 6.700 | 13.250 |
| 221A | 1345. | 1.171 | 1.018 | 1.436 | 1.421 | 1.413 | 6.800 | 12.840 |
| 221A | 1345. | 1.162 | 1.018 | 1.436 | 1.421 | 1.412 | 7.180 | 13.340 |
| 221A | 1345. | 1.162 | 1.018 | 1.436 | 1.421 | 1.411 | 7.170 | 13.420 |
| 221A | 1345. | 1.162 | 1.018 | 1.436 | 1.421 | 1.412 | 7.170 | 13.650 |
| 221A | 1345. | 1.162 | 1.018 | 1.436 | 1.421 | 1.412 | 6.920 | 14.810 |
| 221A | 1345. | 1.162 | 1.018 | 1.436 | 1.421 | 1.413 | 6.720 | 13.970 |
| 221A | 1345. | 1.162 | 1.018 | 1.436 | 1.421 | 1.411 | 6.590 | 13.910 |
| 221A | 1345. | 1.162 | 1.018 | 1.436 | 1.421 | 1.410 | 6.240 | 13.560 |
| 221A | 1345. | 1.162 | 1.018 | 1.436 | 1.421 | 1.413 | 6.000 | 13.440 |
| 221A | 1345. | 1.162 | 1.018 | 1.436 | 1.421 | 1.410 | 5.760 | 12.700 |
| 221A | 1345. | 1.162 | 1.018 | 1.436 | 1.421 | 1.411 | 5.280 | 12.500 |
| 221A | 1345. | 1.162 | 1.018 | 1.436 | 1.421 | 1.411 | 5.040 | 12.100 |
| 221A | 1345. | 1.162 | 1.018 | 1.436 | 1.421 | 1.408 | 4.800 | 12.810 |
| 221A | 1345. | 1.162 | 1.018 | 1.436 | 1.421 | 1.408 | 4.560 | 12.270 |
| 221A | 1345. | 1.162 | 1.018 | 1.436 | 1.421 | 1.408 | 4.170 | 11.100 |

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OF POOR QUALITY

DATE OF RUN 15.08/27/76
 BACK DAY HIGH-DIS
 221A 1611 1:251
 221A 1612 1:276
 221A 1613 1:297
 221A 1614 1:322
 221A 1615 1:347
 221A 1616 1:372
 221A 1617 1:397
 221A 1618 1:422
 221A 1619 1:447
 221A 1620 1:472
 221A 1621 1:497
 221A 1622 1:522
 221A 1623 1:547
 221A 1624 1:572
 221A 1625 1:597
 221A 1626 2:022
 221A 1627 2:047
 221A 1628 2:072
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 221A 1630 2:122
 221A 1631 2:147
 221A 1632 2:172
 221A 1633 2:197
 221A 1634 2:222
 221A 1635 2:247
 221A 1636 2:272
 221A 1637 2:297
 221A 1638 2:322
 221A 1639 2:347
 221A 1640 2:372
 221A 1641 2:397
 221A 1642 2:422
 221A 1643 2:447
 221A 1644 2:472
 221A 1645 2:497
 221A 1646 2:522
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 221A 1648 2:572
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 221A 1651 3:047
 221A 1652 3:072
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 221A 1654 3:122
 221A 1655 3:147
 221A 1656 3:172
 221A 1657 3:197
 221A 1658 3:222
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 221A 1701 5:097
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 221A 1703 5:147
 221A 1704 5:172
 221A 1705 5:197
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 221A 1710 5:322
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 221A 1719 5:547
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 221A 1722 6:022
 221A 1723 6:047
 221A 1724 6:072
 221A 1725 6:097
 221A 1726 6:122
 221A 1727 6:147
 221A 1728 6:172
 221A 1729 6:197
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 221A 1750 7:122
 221A 1751 7:147
 221A 1752 7:172
 221A 1753 7:197
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 221A 1775 8:147
 221A 1776 8:172
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 221A 1779 8:247
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 221A 1781 8:297
 221A 1782 8:322
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2. Pack 222A, 5-cells

a. Cell information: (Same as pack 221A, Section V.E.1.)

b. Parameters:

| | | | |
|--------------------------|-------|----------------------|-----|
| Depth of Discharge (%) | 60 | Temperature (°C) | 10 |
| Charge Control | VL | Float Current (amps) | .20 |
| Charge Current (amps) | 1.20 | Auxiliary Electrode: | |
| Discharge Current (amps) | 6.00 | Resistance (ohms) | 20 |
| Voltage Limit (v/c) | 1.457 | | |

c. Capacity Checks: (Discharge to .50 volts any cell)

| | Cell
1 | Cell
2 | Cell
3 | Cell
4 | Cell
5 | ah
out |
|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Precycling (Figure 151) | .756 | .864 | .500 | .900 | .872 | 15.70 |
| Shadow 1 (Figure 152) | .714 | .909 | .782 | .826 | .696 | 16.21 |
| Shadow 2 (Figure 153) | .841 | .977 | .700 | .561 | .979 | 17.38 |
| Shadow 3 (Figure 154) | .471 | .903 | .475 | .073 | .922 | 17.64 |
| Shadow 4 (Figure 155) | .627 | .839 | .732 | .424 | .907 | 17.94 |
| Shadow 5 | .534 | .769 | .592 | .221 | .845 | 18.06 |
| Shadow 6 | 1.079 | 1.037 | 1.088 | 1.086 | .481 | 13.39 |
| Shadow 7 (Figure 156) | 1.165 | 1.068 | 1.162 | 1.170 | .470 | 10.52 |
| Shadow 8 (Figure 157) | 1.171 | 1.128 | 1.173 | 1.176 | .476 | 8.81 |
| Shadow 9 (Figure 158) | .566 | .421 | .676 | .954 | * | 17.28 |

*--Cell 5 leaking, discontinued during capacity check, 5.5 ah out.

d. Test results during Eclipse Seasons: (Figures 159 to 167)

(1) End of Discharge Voltages: There was a sharp decrease in the low EOD voltages during shadow 6 as compared to the previous shadows. This decline can be attributed to the "drying out" of cell 5. The pack was transferred, following eclipse season 3, from the old data system to the new computer controlled data acquisition system. While rewiring the pack, a small hole was created in the seal of cell 5 while soldering. This hole was potted and the cell allowed to remain in the pack. The cell was checked, at the beginning of shadow 6, and found to be leaking. This cell was removed (shadow 9) during the capacity check in which it delivered 5.5 ah.

(2) End of Charge Voltages: The cells have always been unbalanced at the end of charge. Cell 5 began to exhibit the highest voltage during shadow 6 which indicates it was "drying" out.

(3) Ampere-Hours Input: The input is high at the beginning of shadows 6 and 7 due to the pack being charged at 1.2 amperes constantly at the end of the sun periods preceeding these shadow periods. The high input at the beginning of shadow 8 is due to the pack not being fully charged at the start of its shadow period. The ampere-hour input at the beginning of shadow 9 is normal, due to the pack being trickle charged at .2 amperes during the sun period prior to shadow 9.

(4) Pressures at End of Charge: Pressures did not exceed 25 psia during any eclipse season. Cell 5 did not indicate a change in pressure following the sun period prior to shadow 6.

e. Performance during Sun Periods: The pack has completed 9 sun periods as it began test with an eclipse season. The pack floated at its voltage limit for the first 4 periods. At the end of periods 5 and 6 it was charging at 1.2 amperes due to temperature increase and was below its voltage limit. Following period 6, the pack has been placed on a .2 ampere trickle charge for the sun periods. The pressures have always indicated a vacuum during the float periods, even when the cells were being overcharged. Following is a listing of the high, average, and low cell voltages and current (amps) at the start and end of each sun period.

| Sun Periods | | | | | | | | | |
|-------------|--|----------|----------|----------|----------|----------|----------|----------|----------|
| | | 1 | | 2 | | 3 | | 4 | |
| Voltages* | | Start | End | Start | End | Start | End | Start | End |
| High | | 1.474(4) | 1.480(4) | 1.481(4) | 1.485(4) | 1.465(4) | 1.489(4) | 1.513(4) | 1.488(4) |
| Average | | 1.458 | 1.457 | 1.459 | 1.457 | 1.455 | 1.457 | 1.459 | 1.458 |
| Low | | 1.431(2) | 1.430(5) | 1.446(2) | 1.440(5) | 1.447(2) | 1.436(5) | 1.434(5) | 1.427(5) |
| Current | | .12 | .17 | .15 | .19 | .13 | .22 | .19 | .51 |
| | | 5 | | 6 | | 7** | | 8 | |
| Voltages | | Start | End | Start | End | Start | End | Start | End*** |
| High | | 1.510(4) | 1.478(2) | 1.491(5) | 1.450(2) | 1.487(5) | 1.397(2) | 1.443(5) | |
| Average | | 1.457 | 1.446 | 1.454 | 1.424 | 1.453 | 1.383 | 1.411 | 1.311 |
| Low | | 1.432(5) | 1.420(3) | 1.430(2) | 1.411(5) | 1.428(3) | 1.376(3) | 1.397(1) | |
| Current | | .20 | 1.20 | .34 | 1.20 | .20 | .20 | .20 | |
| | | 9 | | | | | | | |
| Voltages | | Start | End | | | | | | |
| High | | 1.423(2) | 1.403(2) | | | | | | |
| Average | | 1.411 | 1.393 | | | | | | |
| Low | | 1.398(4) | 1.386(4) | | | | | | |
| Current | | .2 | .2 | | | | | | |

*--() indicates which cell

**-- current reduced to .2 amperes at start

***--cells were 1.310 volts and not fully charged due to low voltage programed on power supply

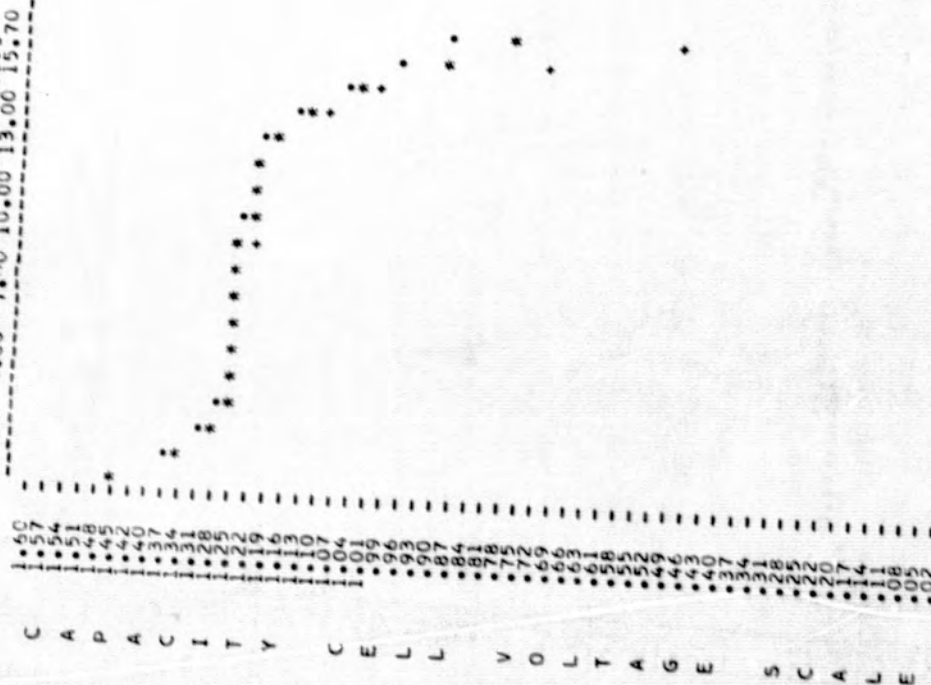
f. Cell Analysis: Cell 5 was sent to GSFC for analysis.

* HIGH CELL
 * Low Cell
 * Average Cell

PACK NUMBER IS 222A
 PRE-CHARGING IS 62 DEGREES
 CYCLE NUMBER IS 7.
 DISCHARGE RATE IS 6.

AMPERE HOUR OUT

WQEC/C 77-134



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TIME IN MINUTES
 CELLS INCLUDED V1 V2 V3 V4 V5

FIGURE 151

KEY
 • HIGH CELL
 + Low Cell
 * Average Cell

PACK NUMBER 15 222A
 SHADOW PERIOD 15 1
 CYCLE NUMBER 15 29.
 DISCHARGE RATE 15 6.0

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AMPERE HOUR OUT

.10 1.38 2.57 3.77 4.98 6.19 7.40 8.61 9.82 11.03 12.24 13.45 15.20 16.21
 .78 1.97 3.17 4.38 5.58 6.79 8.00 9.22 10.43 11.64 12.85 14.63 15.74

C 1.60
 A 1.57
 P 1.54
 A 1.51
 C 1.48
 I 1.45
 T 1.42
 Y 1.40
 C 1.37
 E 1.34
 L 1.31
 L 1.28
 V 1.25
 O 1.22
 L 1.19
 T 1.16
 A 1.13
 G 1.10
 E 1.07
 S 1.04
 C 1.01
 A 1.99
 L 1.96
 E 1.93
 S 1.90
 C 1.87
 A 1.84
 L 1.81
 E 1.78
 S 1.75
 C 1.72
 A 1.69
 L 1.66
 E 1.63
 S 1.61
 C 1.58
 A 1.55
 L 1.52
 E 1.49
 S 1.46
 C 1.43
 A 1.40
 L 1.37
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 S 1.31
 C 1.28
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 L 1.22
 E 1.20
 S 1.17
 C 1.14
 A 1.11
 L 1.08
 E 1.05
 S 1.02

1. 8. 14. 20. 26. 32. 38. 44. 50. 56. 62. 68. 74. 80. 86. 92. 98. 104. 110. 116. 122. 128. 134. 140. 146. 152. 158. 164.

TIME IN MINUTES
 CELLS INCLUDED V1 V2 V3 V4 V5

FIGURE 152

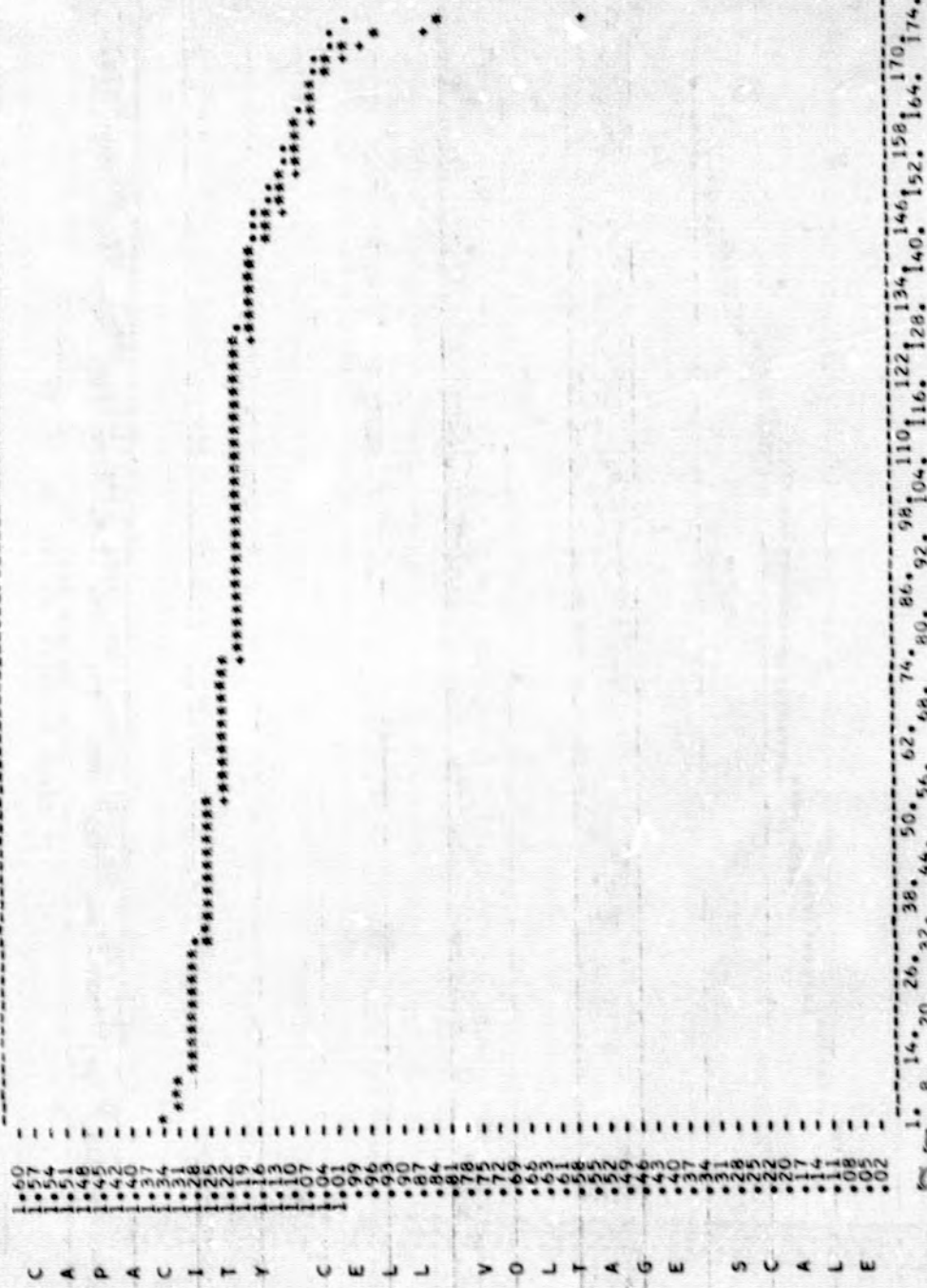
WJEC/C 77-134

BACK NUMBER IS 222A
SMALLER NUMBER IS 211.
CYCLE NUMBER IS 6.0
DISCHARGE RATE IS 6.0

AMPERE HOUR OUT

1. 1.34 2.59 3.80 5.01 6.22 7.43 8.64 9.86 11.07 12.28 13.49 14.71 15.90 17.04
79 1.99 3.19 4.40 5.61 6.82 8.04 9.25 10.46 11.67 12.89 14.10 15.31 16.48 17.38

KEY
* HIGH CELL
* Low Cell
* Average Cell



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FIGURE 153

KEY
 • HIGH CELL
 + Low Cell
 * Average Cell

PACK NUMBER IS 222A
 SHADOW PERIOD IS 3
 CYCLE NUMBER IS 393.
 DISCHARGE RATE IS 6.

WQEC/C 77-134

AMPERE HOUR OUT

1.60 1.57 1.54 1.51 1.48 1.45 1.42 1.40 1.37 1.34 1.31 1.28 1.25 1.22 1.19 1.16 1.13 1.10 1.07 1.04 1.01 0.99 0.96 0.93 0.90 0.87 0.84 0.81 0.78 0.75 0.72 0.69 0.66 0.63 0.61 0.58 0.55 0.52 0.49 0.46 0.43 0.40 0.37 0.34 0.31 0.28 0.25 0.22 0.20 0.17 0.14 0.11 0.08 0.05 0.02

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1.10 1.39 2.59 3.79 5.00 6.20 7.61 9.02 10.22 11.43 12.64 13.84 15.03 16.24 17.44
 0.79 1.99 3.19 4.39 5.60 6.81 8.41 9.62 10.83 12.03 13.24 14.44 15.63 16.84 17.64

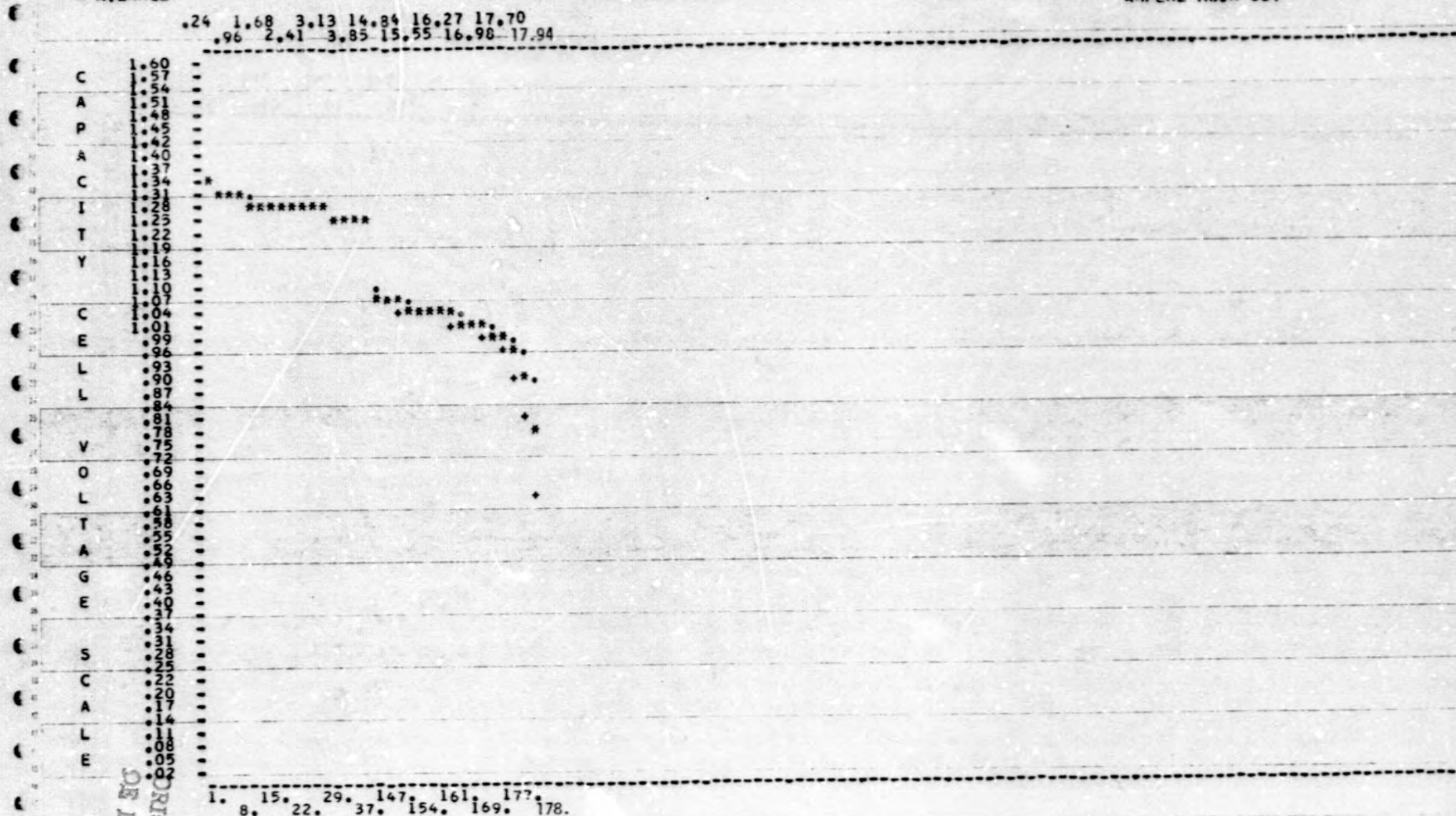
1. 8. 14. 20. 26. 32. 38. 44. 50. 56. 62. 68. 76. 84. 90. 96. 102. 108. 114. 120. 126. 132. 138. 144. 150. 156. 162. 168. 174. 176.

TIME IN MINUTES
 CELLS INCLUDED V1 V2 V3 V4 V5

FIGURE 154

PACK NUMBER IS 222A
SHADOW PERIOD IS 4
CYCLE NUMBER IS 580.
DISCHARGE RATE IS 6.

AMPERE HOUR OUT



TIME 14 MINUTES
CELLS INCLUDED V1 V2 V3 V4 V5

FIGURE 155

ORIGINAL PAGE IS
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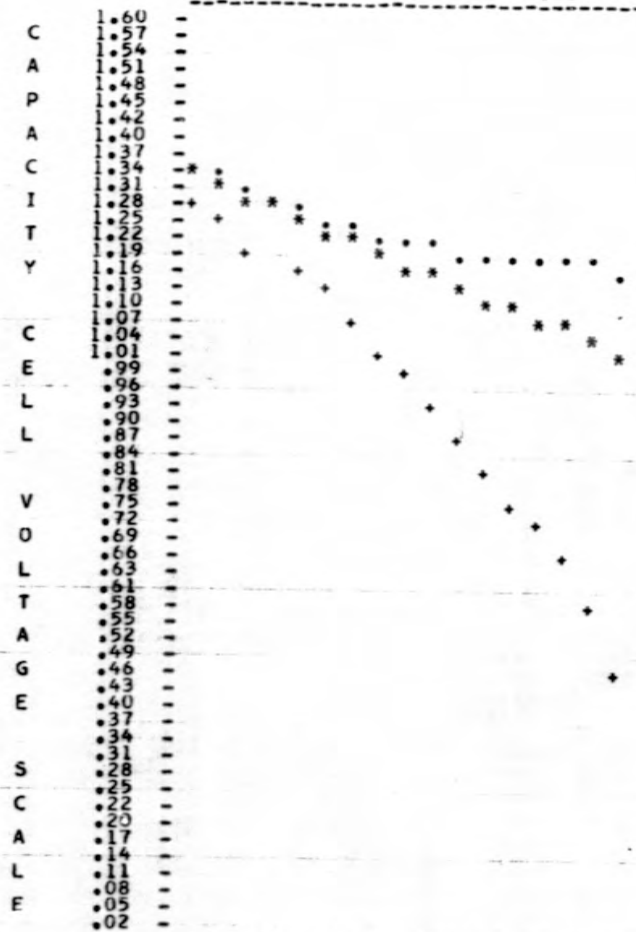
KEY
 • HIGH CELL
 + Low Cell
 * Average Cell

PACK NUMBER 15 222A
 SHADOW PERIOD 15 7
 CYCLE NUMBER 15 1312.
 DISCHARGE RATE IS 6.

WQEC/C 77-134

AMPERE HOUR OUT

.24 1.91 4.06 6.21 8.13 9.80
 .48 2.63 4.78 6.93 8.36 10.52
 1.19 3.35 5.50 7.65 9.08



TIME IN MINUTES
 CELLS INCLUDED V1 V2 V3 V4 V5

FIGURE 156

KEY
 • HIGH CELL
 + Low Cell
 * Average Cell

PACK NUMBER IS 222A
 SHADOW PERIOD IS 8
 CYCLE NUMBER IS 1591.
 DISCHARGE RATE IS 6.

WQEC/C 77-134

AMPERE HOUR OUT

.23 .45 3.09 5.23 7.38
 .47 1.66 3.81 5.95 8.09
 .71 2.38 4.52 6.66 8.81

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1.36
1.33
1.30
1.27
1.24
1.21
1.18
1.15
1.12
1.09
1.06
1.03
1.00
0.97
0.94
0.91
0.88
0.85
0.82
0.79
0.76
0.73
0.70
0.67
0.64
0.61
0.58
0.55
0.52
0.49
0.46
0.43
0.40
0.37
0.34
0.31
0.28
0.25
0.22
0.19
0.16
0.13
0.10
0.07
0.04
0.01
0.00



ORIGINAL PAGE IS
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TIME IN MINUTES
 CELLS INCLUDED V1 V2 V3 V4 V5

FIGURE 157

KEY
 * HIGH CELL
 + Low Cell
 * Average Cell

PACK NUMBER 15 222A
 SHADOW PERIOD 15 9
 CYCLE NUMBER 15 1773.
 DISCHARGE RATE 15 6.

AMPERE HOUR OUT

WQEC/C 77-134

2.3 2.38 4.99 4.95 7.20 10.22 13.25 16.27
 4.7 3.33 5.23 5.95 8.21 11.23 14.26 17.28
 1.42 4.28 5.47 6.19 9.22 12.24 15.26

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17
14
11
08
05
02

1. 4. 23. 32. 49. 52. 59. 59. 71. 80. 100. 109. 128. 138. 158.
 13. 42. 54. 61. 90. 119. 148. 167.

TIME IN MINUTES
 CELLS INCLUDED V1 V2 V3 V4 V5

FIGURE 158

KE
 • H
 • A
 • L
 • H
 • X
 • Y

END
 END
 END
 END
 END
 END

DISCHARGE
 DISCHARGE
 DISCHARGE
 DISCHARGE
 DISCHARGE
 DISCHARGE

VOLTAGE
 VOLTAGE
 VOLTAGE
 VOLTAGE
 VOLTAGE
 VOLTAGE

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60
 TEMPERATURE 10
 AMPERE RATE 12
 EAGLE PITCHER CELLS

WQEC/C 77-134

SFRIAL 005 002 015 014 025

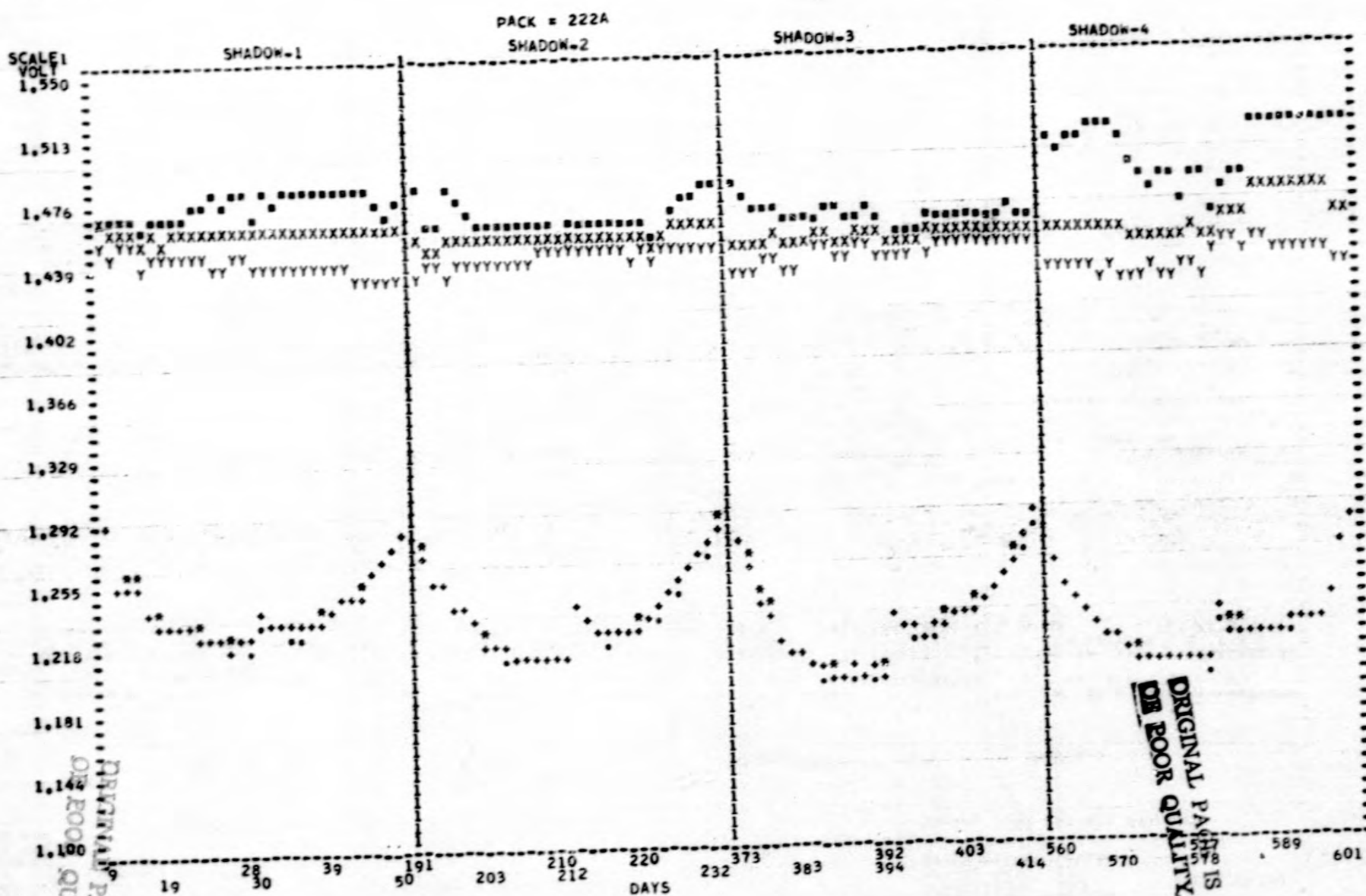


FIGURE 159
367

ORIGINAL PAGE IS
OF POOR QUALITY

ORIGINAL PAGE IS
OF POOR QUALITY

KEY
 * HIGH END DISCHARGE VOLTAGE
 + AVE END DISCHARGE VOLTAGE
 . LOW END DISCHARGE VOLTAGE
 x HIGH EOC
 X AVE EOC
 Y LOW EOC

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60
 TEMPERATURE 10
 AMPERE RATE 12
 EAGLE PITCHER CELLS

WQEC/C 77-134

SERIAL 005 002 015 014 025

PACK = 222A

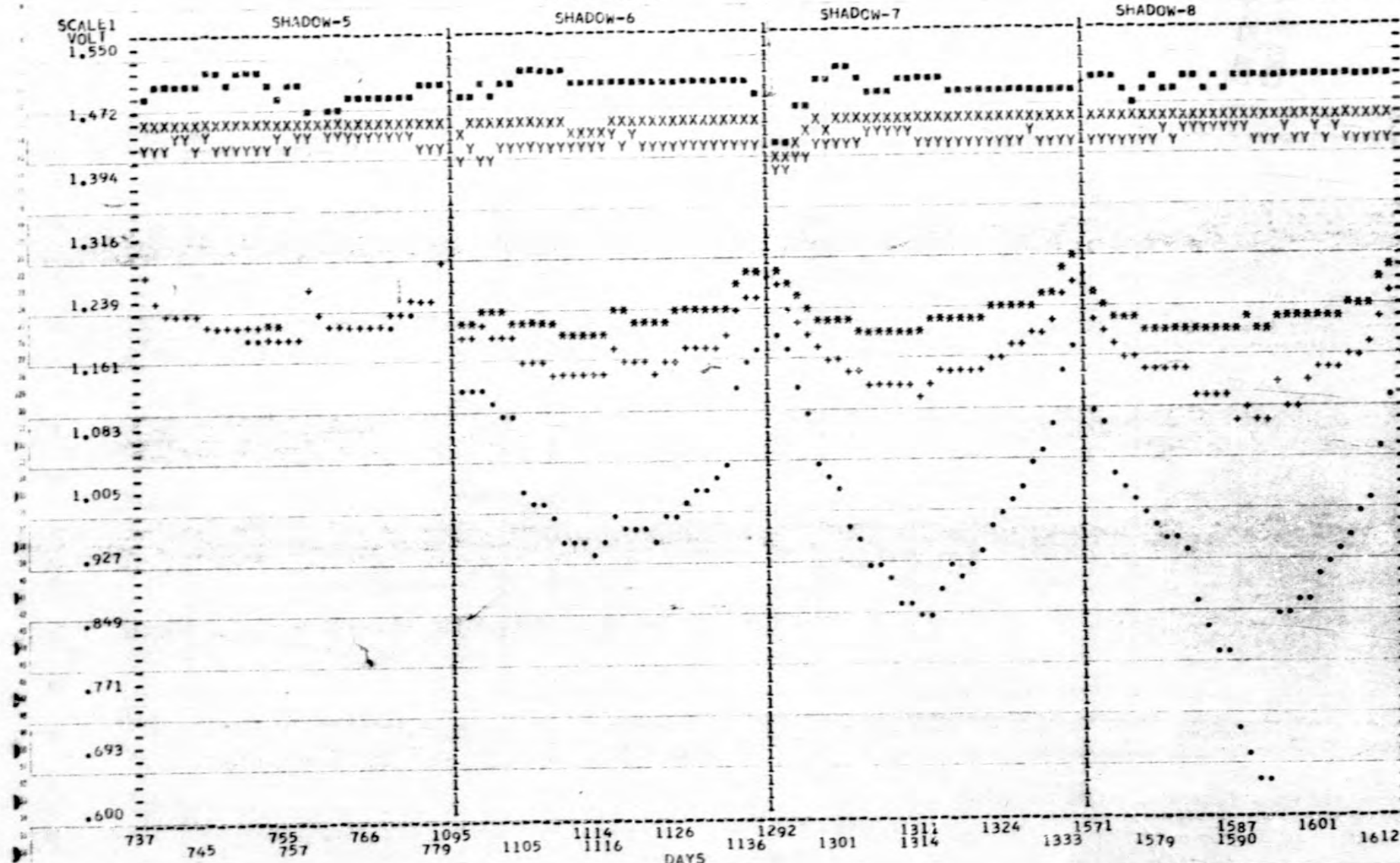


FIGURE 160
 368

KEY
 * HIGH END DISCHARGE VOLTAGE
 • AVE END DISCHARGE VOLTAGE
 • LOW END DISCHARGE VOLTAGE
 * HIGH EOC
 X AVE EOC
 Y LOW EOC

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60
 TEMPERATURE 10
 AMPERE RATE 12
 EAGLE PITCHER CELLS

WQEC/C 77-134

SERIAL 005 002 015 014 025

PACK = 222A

SCALE1
 VOLT
 1.500

SHADOW-9

SHADOW-

SHADOW-

SHADOW-

1.467

1.434

1.402

1.369

1.336

1.303

1.270

1.238

1.205

1.172

1.139

1.100

1753

1761

1771

1784

1794

0

0

0

0

0

0

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0

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0

DAYS

FIGURE 161

369

ORIGINAL PAGE IS
 OF POOR QUALITY

KEY
 * AHO
 * AHI-TOTAL

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60
 TEMPERATURE 10
 AMPERE RATE 12
 EAGLE PITCHER CELLS
 SERIAL 005 002 015 014 025

WQEC/C 77-134

PACK = 222A

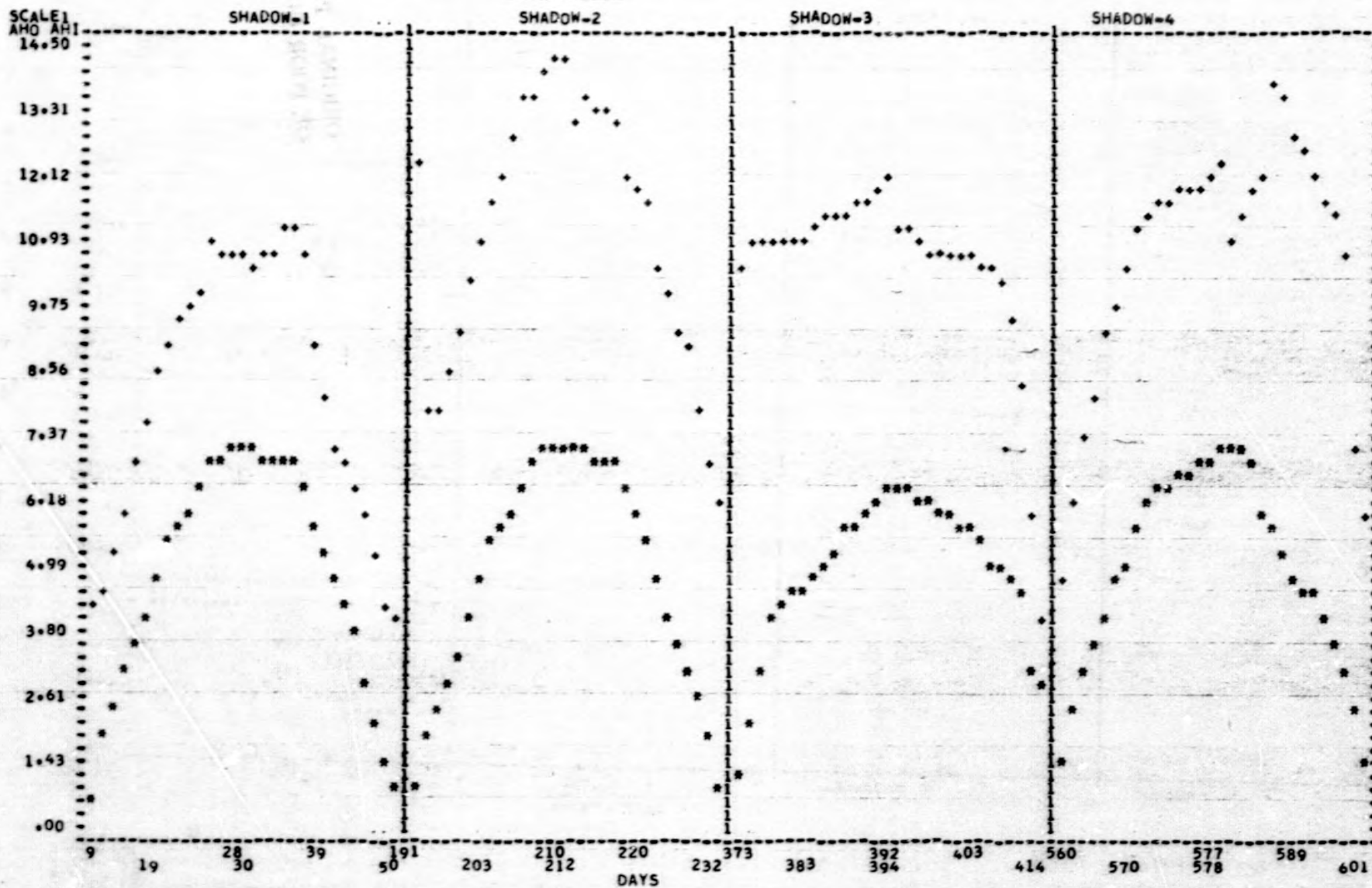


FIGURE 162

* LMO
 * AMI-TOTAL

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60 WIEC/C 77-134
 TEMPERATURE 10
 ALTITUDE RATE 12
 CODE PITCHER CELLS
 SERIAL 003 002 015 014 025

PACK = 222A

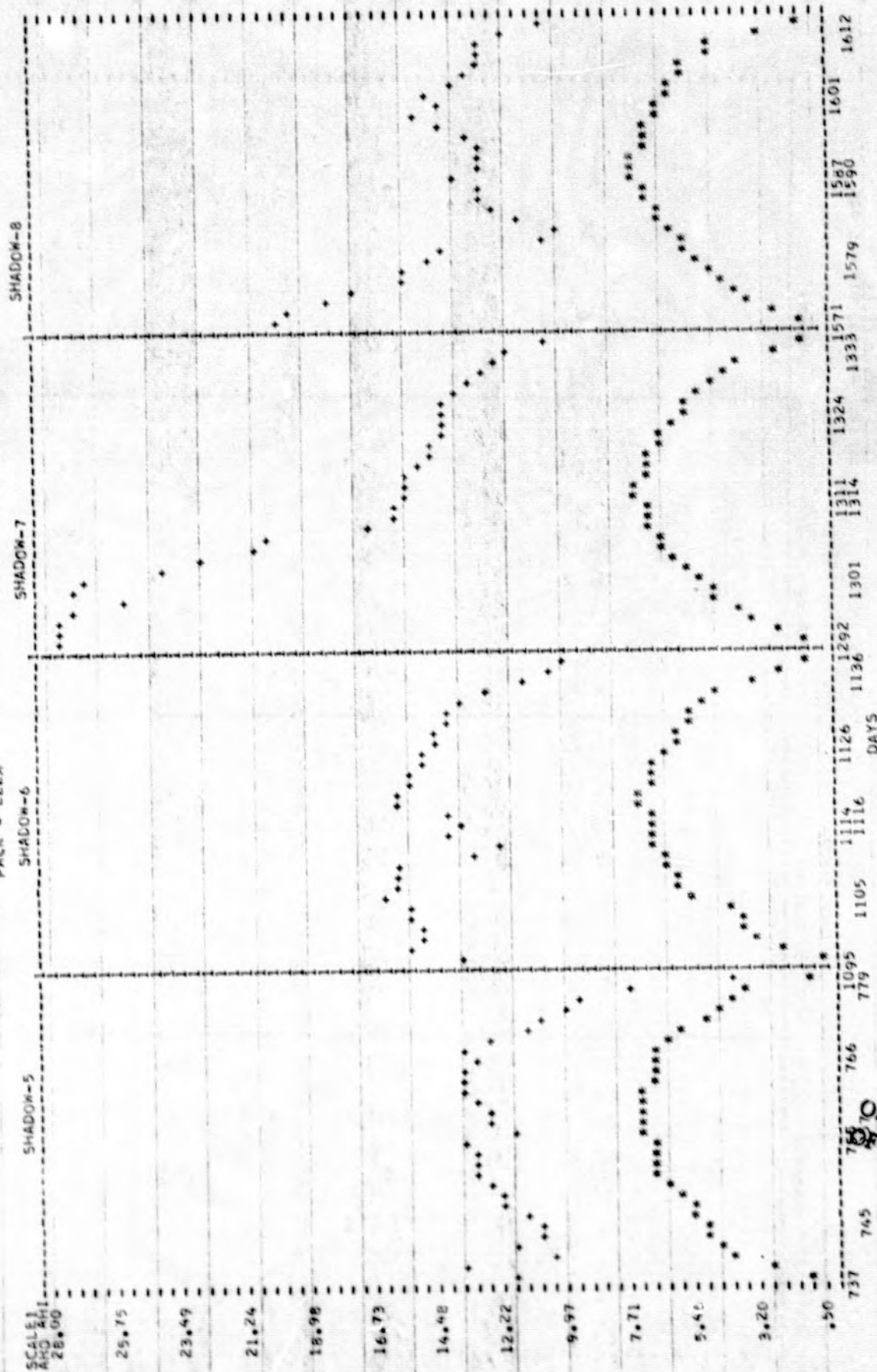


FIGURE 163

ORIGINAL PAGE
 OF POOR QUALITY

KEY
 * AHI
 + AHI-TOTAL

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 222A

DEPTH DISCHARGE 60
 TEMPERATURE 10
 AMPERE RATE 12
 SERIAL 005 002 015 014 025

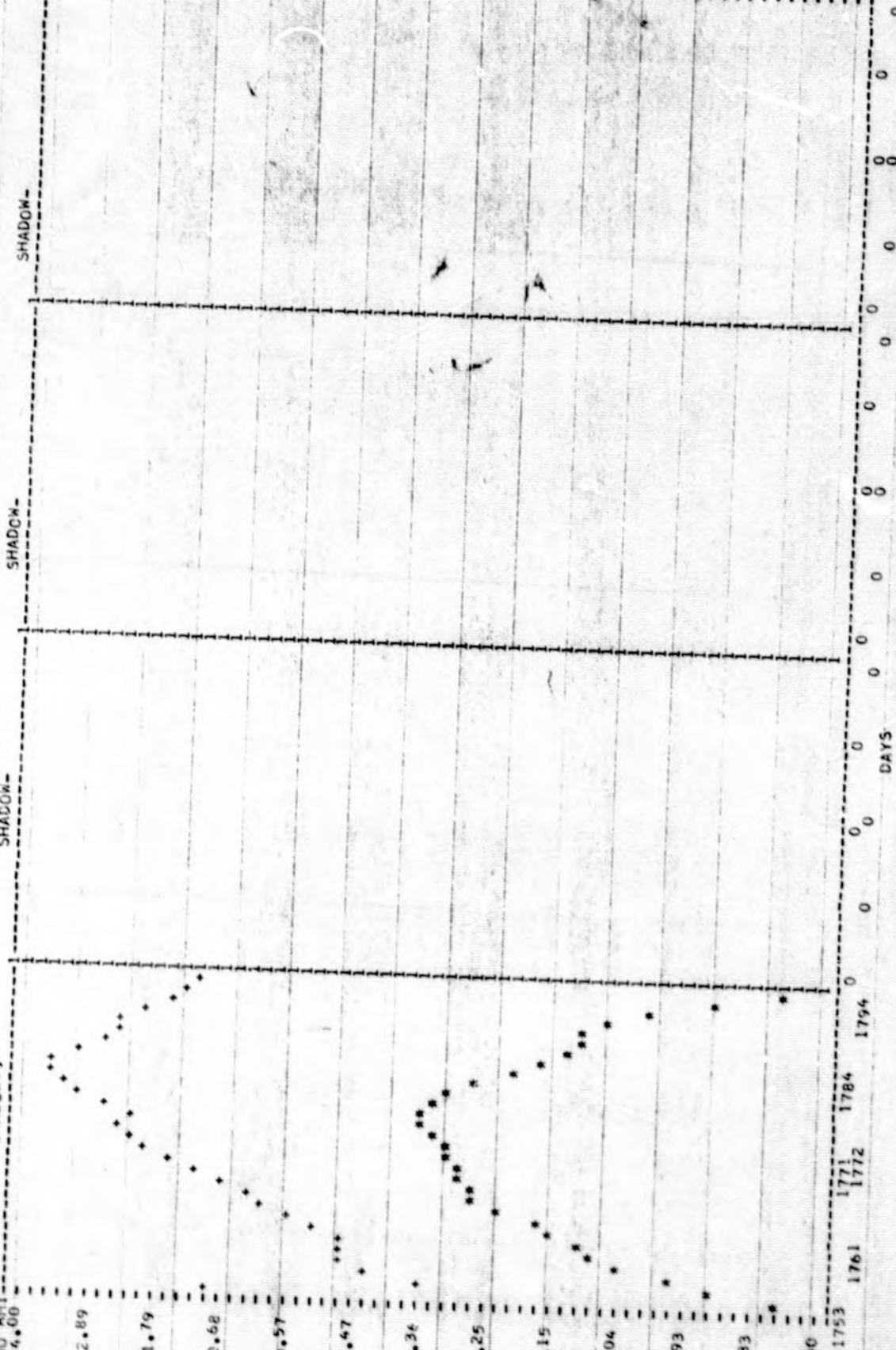
SCALE
 AHI 14.00

SHADOW-9

SHADOW-

SHADOW-

SHADOW-



KEY
* END CHARGE CURRENT

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60
TEMPERATURE 10
AMPERE RATE 12
SERIAL 005 002 015 014 025

WQEL 77-134

EAGLE Picher CELLS

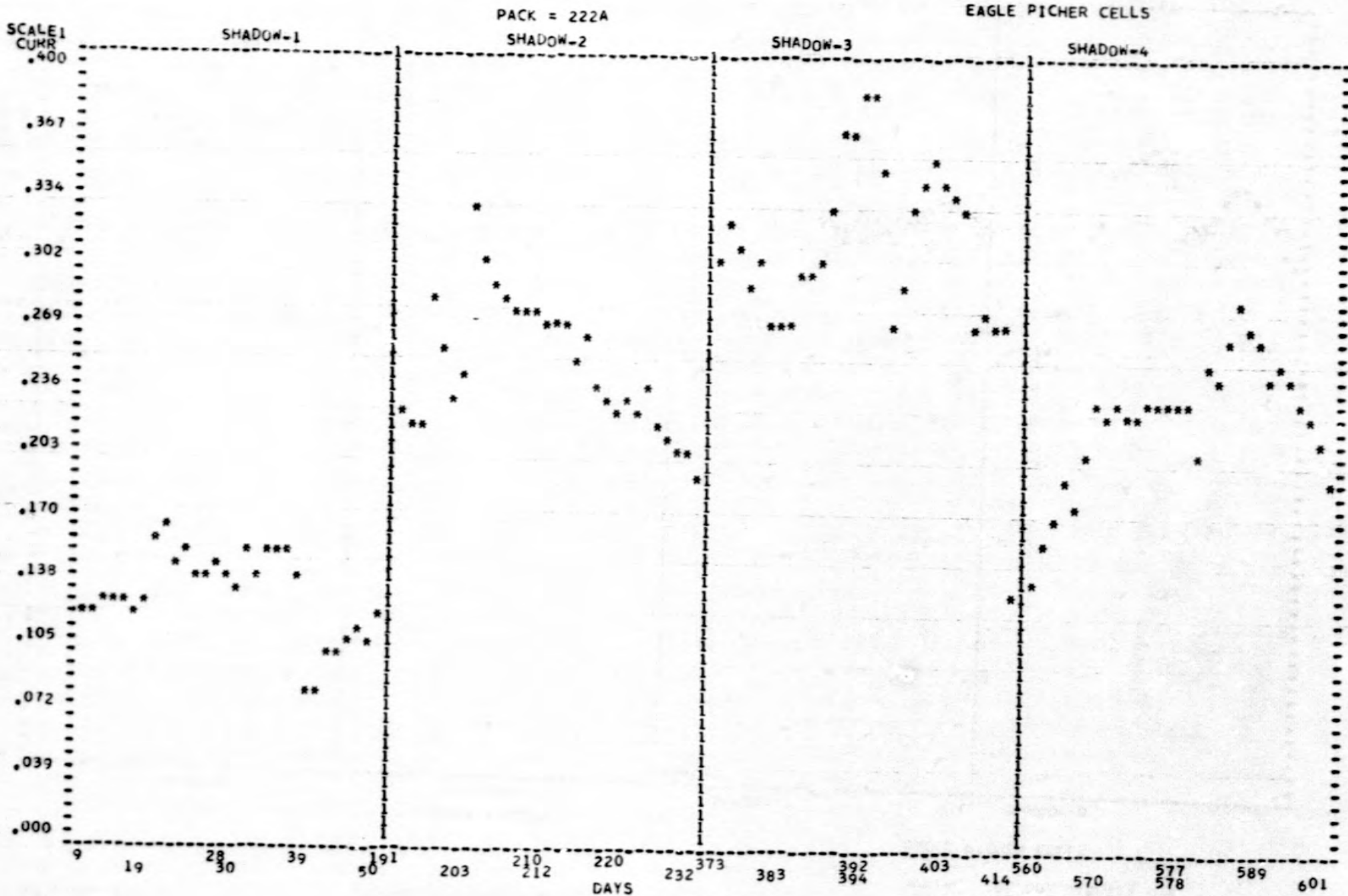


FIGURE 165

KEY
* END CHARGE CURRENT

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60 WQEC/C 77-134
TEMPERATURE 10
AMPERE RATE 12
SERIAL 005 002 015 014 025

EAGLE PITCHER CELLS

PACK = 222A

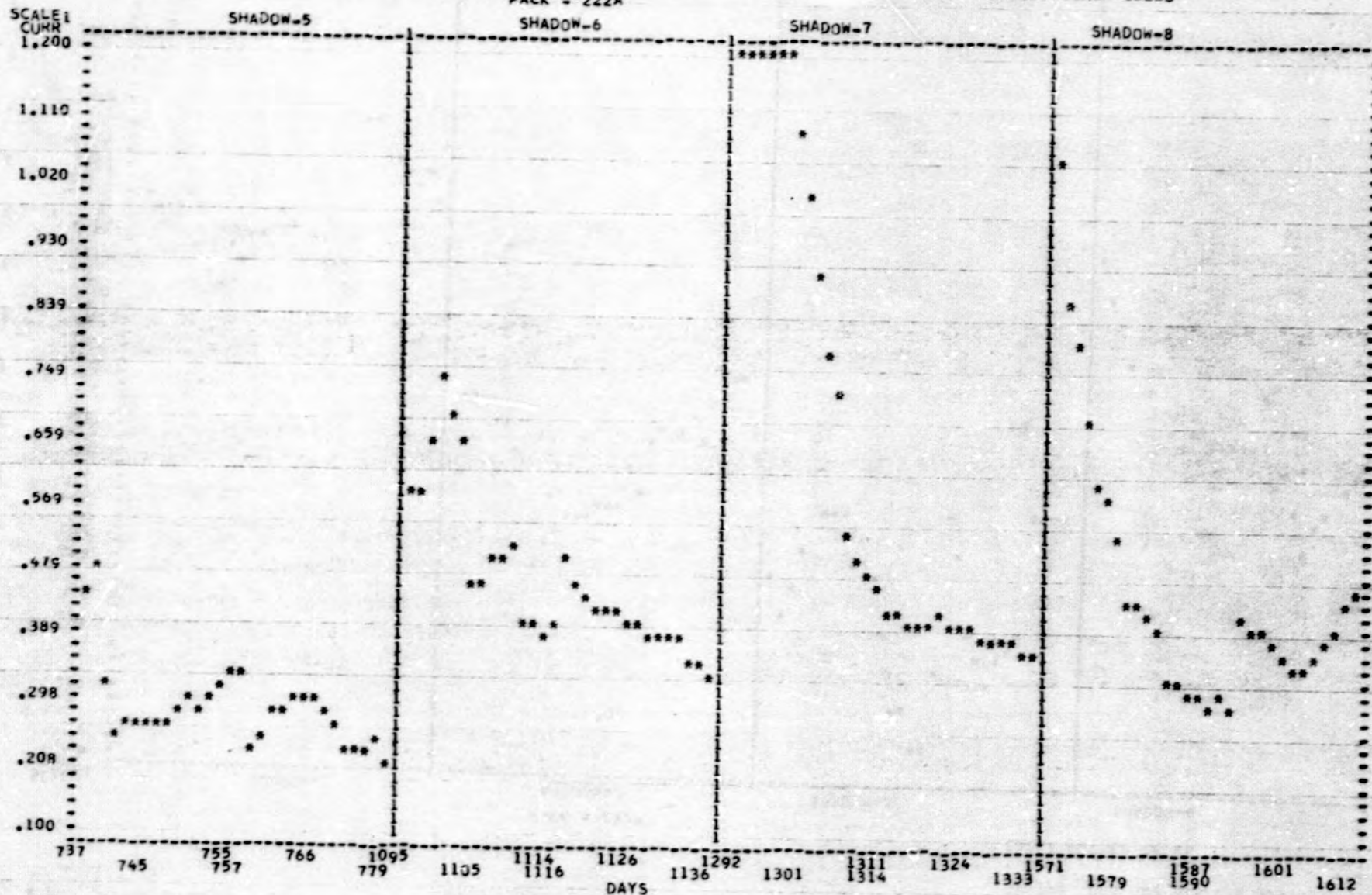


FIGURE 166

KE 100 CHARGE CURRENT

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60
TEMPERATURE 10
AMPERE RATE 12
SERIAL 005 002 015 014 025

WQE 77-134

PACK = 222A

EAGLE PICHER CELLS

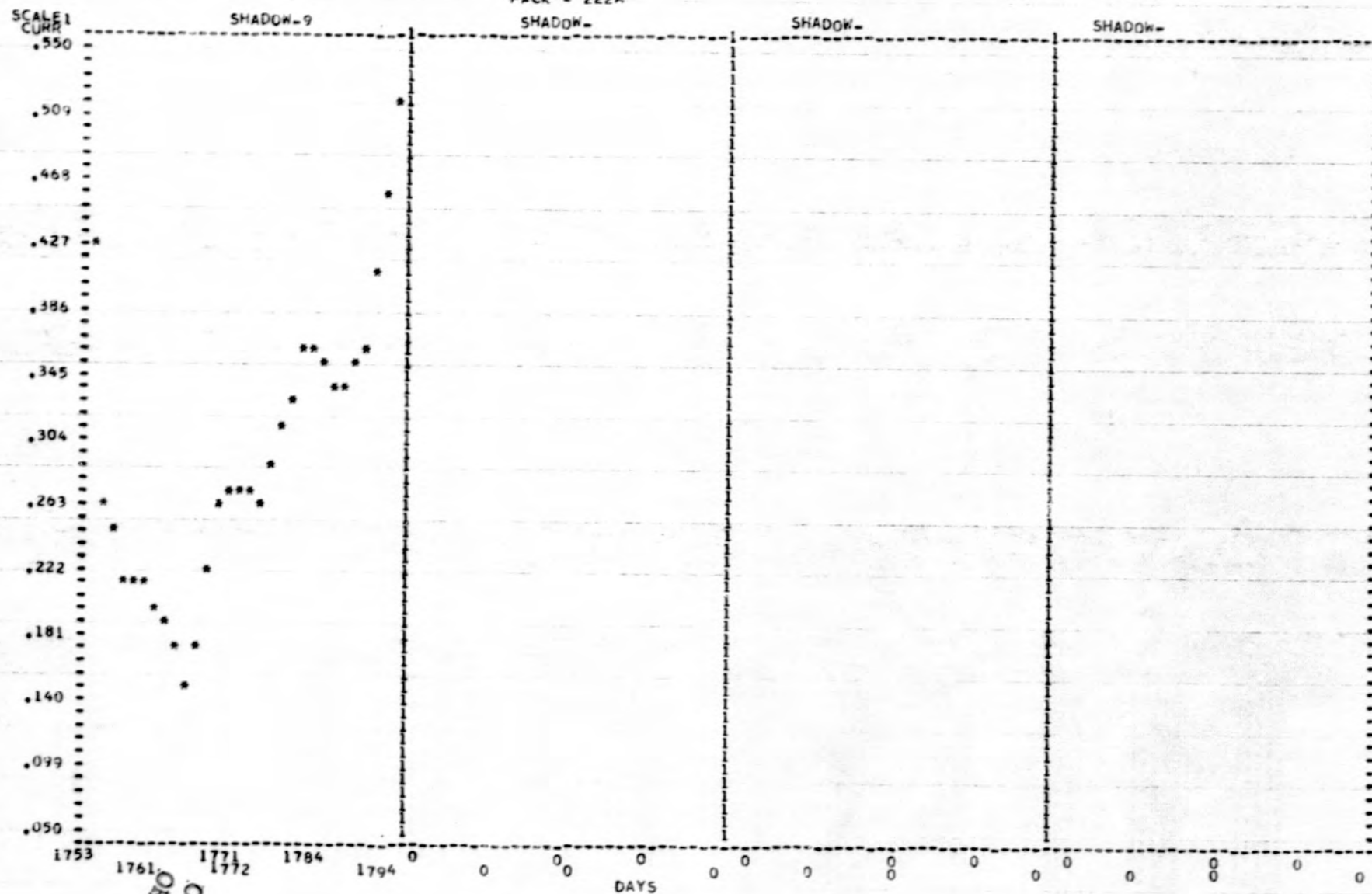


FIGURE 167

ORIGINAL PAGE
OF POOR QUALITY

WQEC/C 77-134
PAGE 15 14.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 1.0 | .000 | V1 | .445 | V2 | .447 | V3 | .445 | V4 | .448 | .000 | .448 | .445 |
| 10 | .100 | V1 | .455 | V2 | .457 | V3 | .455 | V4 | .452 | .000 | .452 | .455 |
| 20 | .200 | V1 | .465 | V2 | .467 | V3 | .465 | V4 | .462 | .000 | .462 | .465 |
| 30 | .300 | V1 | .475 | V2 | .477 | V3 | .475 | V4 | .472 | .000 | .472 | .475 |
| 40 | .400 | V1 | .485 | V2 | .487 | V3 | .485 | V4 | .482 | .000 | .482 | .485 |
| 50 | .500 | V1 | .495 | V2 | .497 | V3 | .495 | V4 | .492 | .000 | .492 | .495 |
| 60 | .600 | V1 | .505 | V2 | .507 | V3 | .505 | V4 | .502 | .000 | .502 | .505 |
| 70 | .700 | V1 | .515 | V2 | .517 | V3 | .515 | V4 | .512 | .000 | .512 | .515 |
| 80 | .800 | V1 | .525 | V2 | .527 | V3 | .525 | V4 | .522 | .000 | .522 | .525 |
| 90 | .900 | V1 | .535 | V2 | .537 | V3 | .535 | V4 | .532 | .000 | .532 | .535 |
| 100 | 1.000 | V1 | .545 | V2 | .547 | V3 | .545 | V4 | .542 | .000 | .542 | .545 |
| 110 | 1.100 | V1 | .555 | V2 | .557 | V3 | .555 | V4 | .552 | .000 | .552 | .555 |
| 120 | 1.200 | V1 | .565 | V2 | .567 | V3 | .565 | V4 | .562 | .000 | .562 | .565 |
| 130 | 1.300 | V1 | .575 | V2 | .577 | V3 | .575 | V4 | .572 | .000 | .572 | .575 |
| 140 | 1.400 | V1 | .585 | V2 | .587 | V3 | .585 | V4 | .582 | .000 | .582 | .585 |
| 150 | 1.500 | V1 | .595 | V2 | .597 | V3 | .595 | V4 | .592 | .000 | .592 | .595 |
| 160 | 1.600 | V1 | .605 | V2 | .607 | V3 | .605 | V4 | .602 | .000 | .602 | .605 |
| 170 | 1.700 | V1 | .615 | V2 | .617 | V3 | .615 | V4 | .612 | .000 | .612 | .615 |
| 180 | 1.800 | V1 | .625 | V2 | .627 | V3 | .625 | V4 | .622 | .000 | .622 | .625 |
| 190 | 1.900 | V1 | .635 | V2 | .637 | V3 | .635 | V4 | .632 | .000 | .632 | .635 |
| 200 | 2.000 | V1 | .645 | V2 | .647 | V3 | .645 | V4 | .642 | .000 | .642 | .645 |
| 210 | 2.100 | V1 | .655 | V2 | .657 | V3 | .655 | V4 | .652 | .000 | .652 | .655 |
| 220 | 2.200 | V1 | .665 | V2 | .667 | V3 | .665 | V4 | .662 | .000 | .662 | .665 |
| 230 | 2.300 | V1 | .675 | V2 | .677 | V3 | .675 | V4 | .672 | .000 | .672 | .675 |
| 240 | 2.400 | V1 | .685 | V2 | .687 | V3 | .685 | V4 | .682 | .000 | .682 | .685 |
| 250 | 2.500 | V1 | .695 | V2 | .697 | V3 | .695 | V4 | .692 | .000 | .692 | .695 |
| 260 | 2.600 | V1 | .705 | V2 | .707 | V3 | .705 | V4 | .702 | .000 | .702 | .705 |
| 270 | 2.700 | V1 | .715 | V2 | .717 | V3 | .715 | V4 | .712 | .000 | .712 | .715 |
| 280 | 2.800 | V1 | .725 | V2 | .727 | V3 | .725 | V4 | .722 | .000 | .722 | .725 |
| 290 | 2.900 | V1 | .735 | V2 | .737 | V3 | .735 | V4 | .732 | .000 | .732 | .735 |
| 300 | 3.000 | V1 | .745 | V2 | .747 | V3 | .745 | V4 | .742 | .000 | .742 | .745 |
| 310 | 3.100 | V1 | .755 | V2 | .757 | V3 | .755 | V4 | .752 | .000 | .752 | .755 |
| 320 | 3.200 | V1 | .765 | V2 | .767 | V3 | .765 | V4 | .762 | .000 | .762 | .765 |
| 330 | 3.300 | V1 | .775 | V2 | .777 | V3 | .775 | V4 | .772 | .000 | .772 | .775 |

DATE OF RUN IS 04/25/76

PACK NUMBER IS 222A

SHADOW PERIOD IS 1

CYCLE IS

29.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 1. | .096 | V1 | 1.347 | V2 | 1.344 | V3 | 1.342 | V4 | 1.342 | V5 | 1.341 | 1.341 |
| 4. | .388 | V1 | 1.321 | V2 | 1.320 | V3 | 1.319 | V4 | 1.318 | V5 | 1.318 | 1.318 |
| 6. | .585 | V1 | 1.310 | V2 | 1.308 | V3 | 1.307 | V4 | 1.305 | V5 | 1.305 | 1.305 |
| 8. | .763 | V1 | 1.299 | V2 | 1.298 | V3 | 1.298 | V4 | 1.296 | V5 | 1.296 | 1.296 |
| 10. | .931 | V1 | 1.284 | V2 | 1.284 | V3 | 1.284 | V4 | 1.282 | V5 | 1.282 | 1.282 |
| 12. | 1.179 | V1 | 1.277 | V2 | 1.277 | V3 | 1.276 | V4 | 1.275 | V5 | 1.275 | 1.275 |
| 14. | 1.377 | V1 | 1.268 | V2 | 1.268 | V3 | 1.268 | V4 | 1.266 | V5 | 1.266 | 1.266 |
| 16. | 1.574 | V1 | 1.259 | V2 | 1.259 | V3 | 1.259 | V4 | 1.257 | V5 | 1.257 | 1.257 |
| 18. | 1.772 | V1 | 1.250 | V2 | 1.250 | V3 | 1.250 | V4 | 1.248 | V5 | 1.248 | 1.248 |
| 20. | 1.970 | V1 | 1.241 | V2 | 1.241 | V3 | 1.241 | V4 | 1.239 | V5 | 1.239 | 1.239 |
| 22. | 2.168 | V1 | 1.232 | V2 | 1.232 | V3 | 1.232 | V4 | 1.230 | V5 | 1.230 | 1.230 |
| 24. | 2.366 | V1 | 1.223 | V2 | 1.223 | V3 | 1.223 | V4 | 1.221 | V5 | 1.221 | 1.221 |
| 26. | 2.564 | V1 | 1.214 | V2 | 1.214 | V3 | 1.214 | V4 | 1.212 | V5 | 1.212 | 1.212 |
| 28. | 2.762 | V1 | 1.205 | V2 | 1.205 | V3 | 1.205 | V4 | 1.203 | V5 | 1.203 | 1.203 |
| 30. | 2.960 | V1 | 1.196 | V2 | 1.196 | V3 | 1.196 | V4 | 1.194 | V5 | 1.194 | 1.194 |
| 32. | 3.158 | V1 | 1.187 | V2 | 1.187 | V3 | 1.187 | V4 | 1.185 | V5 | 1.185 | 1.185 |
| 34. | 3.356 | V1 | 1.178 | V2 | 1.178 | V3 | 1.178 | V4 | 1.176 | V5 | 1.176 | 1.176 |
| 36. | 3.554 | V1 | 1.169 | V2 | 1.169 | V3 | 1.169 | V4 | 1.167 | V5 | 1.167 | 1.167 |
| 38. | 3.752 | V1 | 1.160 | V2 | 1.160 | V3 | 1.160 | V4 | 1.158 | V5 | 1.158 | 1.158 |
| 40. | 3.950 | V1 | 1.151 | V2 | 1.151 | V3 | 1.151 | V4 | 1.149 | V5 | 1.149 | 1.149 |
| 42. | 4.148 | V1 | 1.142 | V2 | 1.142 | V3 | 1.142 | V4 | 1.140 | V5 | 1.140 | 1.140 |
| 44. | 4.346 | V1 | 1.133 | V2 | 1.133 | V3 | 1.133 | V4 | 1.131 | V5 | 1.131 | 1.131 |
| 46. | 4.544 | V1 | 1.124 | V2 | 1.124 | V3 | 1.124 | V4 | 1.122 | V5 | 1.122 | 1.122 |
| 48. | 4.742 | V1 | 1.115 | V2 | 1.115 | V3 | 1.115 | V4 | 1.113 | V5 | 1.113 | 1.113 |
| 50. | 4.940 | V1 | 1.106 | V2 | 1.106 | V3 | 1.106 | V4 | 1.104 | V5 | 1.104 | 1.104 |
| 52. | 5.138 | V1 | 1.097 | V2 | 1.097 | V3 | 1.097 | V4 | 1.095 | V5 | 1.095 | 1.095 |
| 54. | 5.336 | V1 | 1.088 | V2 | 1.088 | V3 | 1.088 | V4 | 1.086 | V5 | 1.086 | 1.086 |
| 56. | 5.534 | V1 | 1.079 | V2 | 1.079 | V3 | 1.079 | V4 | 1.077 | V5 | 1.077 | 1.077 |
| 58. | 5.732 | V1 | 1.070 | V2 | 1.070 | V3 | 1.070 | V4 | 1.068 | V5 | 1.068 | 1.068 |
| 60. | 5.930 | V1 | 1.061 | V2 | 1.061 | V3 | 1.061 | V4 | 1.059 | V5 | 1.059 | 1.059 |
| 62. | 6.128 | V1 | 1.052 | V2 | 1.052 | V3 | 1.052 | V4 | 1.050 | V5 | 1.050 | 1.050 |
| 64. | 6.326 | V1 | 1.043 | V2 | 1.043 | V3 | 1.043 | V4 | 1.041 | V5 | 1.041 | 1.041 |
| 66. | 6.524 | V1 | 1.034 | V2 | 1.034 | V3 | 1.034 | V4 | 1.032 | V5 | 1.032 | 1.032 |
| 68. | 6.722 | V1 | 1.025 | V2 | 1.025 | V3 | 1.025 | V4 | 1.023 | V5 | 1.023 | 1.023 |
| 70. | 6.920 | V1 | 1.016 | V2 | 1.016 | V3 | 1.016 | V4 | 1.014 | V5 | 1.014 | 1.014 |
| 72. | 7.118 | V1 | 1.007 | V2 | 1.007 | V3 | 1.007 | V4 | 1.005 | V5 | 1.005 | 1.005 |
| 74. | 7.316 | V1 | 0.998 | V2 | 0.998 | V3 | 0.998 | V4 | 0.996 | V5 | 0.996 | 0.996 |
| 76. | 7.514 | V1 | 0.989 | V2 | 0.989 | V3 | 0.989 | V4 | 0.987 | V5 | 0.987 | 0.987 |
| 78. | 7.712 | V1 | 0.980 | V2 | 0.980 | V3 | 0.980 | V4 | 0.978 | V5 | 0.978 | 0.978 |
| 80. | 7.910 | V1 | 0.971 | V2 | 0.971 | V3 | 0.971 | V4 | 0.969 | V5 | 0.969 | 0.969 |
| 82. | 8.108 | V1 | 0.962 | V2 | 0.962 | V3 | 0.962 | V4 | 0.960 | V5 | 0.960 | 0.960 |
| 84. | 8.306 | V1 | 0.953 | V2 | 0.953 | V3 | 0.953 | V4 | 0.951 | V5 | 0.951 | 0.951 |
| 86. | 8.504 | V1 | 0.944 | V2 | 0.944 | V3 | 0.944 | V4 | 0.942 | V5 | 0.942 | 0.942 |
| 88. | 8.702 | V1 | 0.935 | V2 | 0.935 | V3 | 0.935 | V4 | 0.933 | V5 | 0.933 | 0.933 |
| 90. | 8.900 | V1 | 0.926 | V2 | 0.926 | V3 | 0.926 | V4 | 0.924 | V5 | 0.924 | 0.924 |
| 92. | 9.098 | V1 | 0.917 | V2 | 0.917 | V3 | 0.917 | V4 | 0.915 | V5 | 0.915 | 0.915 |
| 94. | 9.296 | V1 | 0.908 | V2 | 0.908 | V3 | 0.908 | V4 | 0.906 | V5 | 0.906 | 0.906 |
| 96. | 9.494 | V1 | 0.899 | V2 | 0.899 | V3 | 0.899 | V4 | 0.897 | V5 | 0.897 | 0.897 |
| 98. | 9.692 | V1 | 0.890 | V2 | 0.890 | V3 | 0.890 | V4 | 0.888 | V5 | 0.888 | 0.888 |
| 100. | 9.890 | V1 | 0.881 | V2 | 0.881 | V3 | 0.881 | V4 | 0.879 | V5 | 0.879 | 0.879 |
| 102. | 10.088 | V1 | 0.872 | V2 | 0.872 | V3 | 0.872 | V4 | 0.870 | V5 | 0.870 | 0.870 |
| 104. | 10.286 | V1 | 0.863 | V2 | 0.863 | V3 | 0.863 | V4 | 0.861 | V5 | 0.861 | 0.861 |
| 106. | 10.484 | V1 | 0.854 | V2 | 0.854 | V3 | 0.854 | V4 | 0.852 | V5 | 0.852 | 0.852 |

ORIGINAL PAGE IS
OF POOR QUALITY

DATE OF RUN IS 09/25/76

PACK NUMBER IS 222A

SHADOW PERIOD IS 1

CYCLE IS

29.

PAGE IS 2.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 108. | 10.832 | V1 | 1.198 | V2 | 1.200 | V3 | 1.200 | V4 | 1.195 | V5 | 1.200 | 1.199 | 1.195 |
| 110. | 11.032 | V1 | 1.196 | V2 | 1.198 | V3 | 1.199 | V4 | 1.192 | V5 | 1.199 | 1.197 | 1.192 |
| 112. | 11.235 | V1 | 1.195 | V2 | 1.195 | V3 | 1.198 | V4 | 1.190 | V5 | 1.197 | 1.195 | 1.190 |
| 114. | 11.437 | V1 | 1.193 | V2 | 1.194 | V3 | 1.195 | V4 | 1.189 | V5 | 1.195 | 1.193 | 1.189 |
| 116. | 11.639 | V1 | 1.191 | V2 | 1.192 | V3 | 1.192 | V4 | 1.186 | V5 | 1.194 | 1.191 | 1.186 |
| 118. | 11.840 | V1 | 1.189 | V2 | 1.189 | V3 | 1.191 | V4 | 1.182 | V5 | 1.192 | 1.189 | 1.182 |
| 120. | 12.042 | V1 | 1.187 | V2 | 1.188 | V3 | 1.189 | V4 | 1.179 | V5 | 1.190 | 1.187 | 1.179 |
| 122. | 12.244 | V1 | 1.184 | V2 | 1.185 | V3 | 1.186 | V4 | 1.171 | V5 | 1.188 | 1.183 | 1.171 |
| 124. | 12.445 | V1 | 1.181 | V2 | 1.182 | V3 | 1.182 | V4 | 1.162 | V5 | 1.185 | 1.178 | 1.162 |
| 126. | 12.647 | V1 | 1.175 | V2 | 1.178 | V3 | 1.178 | V4 | 1.150 | V5 | 1.182 | 1.173 | 1.150 |
| 128. | 12.849 | V1 | 1.169 | V2 | 1.173 | V3 | 1.173 | V4 | 1.136 | V5 | 1.179 | 1.166 | 1.136 |
| 130. | 13.051 | V1 | 1.163 | V2 | 1.167 | V3 | 1.167 | V4 | 1.103 | V5 | 1.148 | 1.130 | 1.103 |
| 132. | 13.253 | V1 | 1.157 | V2 | 1.161 | V3 | 1.161 | V4 | 1.086 | V5 | 1.120 | 1.109 | 1.086 |
| 134. | 13.455 | V1 | 1.151 | V2 | 1.155 | V3 | 1.155 | V4 | 1.076 | V5 | 1.108 | 1.097 | 1.076 |
| 136. | 13.657 | V1 | 1.145 | V2 | 1.149 | V3 | 1.149 | V4 | 1.068 | V5 | 1.096 | 1.086 | 1.068 |
| 138. | 13.859 | V1 | 1.139 | V2 | 1.143 | V3 | 1.143 | V4 | 1.057 | V5 | 1.082 | 1.075 | 1.057 |
| 140. | 14.061 | V1 | 1.133 | V2 | 1.137 | V3 | 1.137 | V4 | 1.044 | V5 | 1.071 | 1.063 | 1.044 |
| 142. | 14.263 | V1 | 1.127 | V2 | 1.131 | V3 | 1.131 | V4 | 1.031 | V5 | 1.057 | 1.051 | 1.031 |
| 144. | 14.465 | V1 | 1.121 | V2 | 1.125 | V3 | 1.125 | V4 | 1.019 | V5 | 1.039 | 1.036 | 1.019 |
| 146. | 14.667 | V1 | 1.115 | V2 | 1.119 | V3 | 1.119 | V4 | 1.008 | V5 | 1.020 | 1.020 | 1.008 |
| 148. | 14.869 | V1 | 1.109 | V2 | 1.113 | V3 | 1.113 | V4 | 0.999 | V5 | 1.000 | 1.002 | 0.992 |
| 150. | 15.071 | V1 | 1.103 | V2 | 1.107 | V3 | 1.107 | V4 | 0.994 | V5 | 1.000 | 1.000 | 0.992 |
| 152. | 15.273 | V1 | 1.097 | V2 | 1.101 | V3 | 1.101 | V4 | 0.977 | V5 | 1.000 | 1.000 | 0.962 |
| 154. | 15.475 | V1 | 1.091 | V2 | 1.095 | V3 | 1.095 | V4 | 0.953 | V5 | 1.000 | 1.000 | 0.913 |
| 156. | 15.677 | V1 | 1.085 | V2 | 1.089 | V3 | 1.089 | V4 | 0.919 | V5 | 1.000 | 1.000 | 0.846 |
| 158. | 15.879 | V1 | 1.079 | V2 | 1.083 | V3 | 1.083 | V4 | 0.852 | V5 | 1.000 | 1.000 | 0.772 |
| 160. | 16.081 | V1 | 1.073 | V2 | 1.077 | V3 | 1.077 | V4 | 0.772 | V5 | 1.000 | 1.000 | 0.696 |
| 162. | 16.283 | V1 | 1.067 | V2 | 1.071 | V3 | 1.071 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |
| 164. | 16.485 | V1 | 1.061 | V2 | 1.065 | V3 | 1.065 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |
| 166. | 16.687 | V1 | 1.055 | V2 | 1.059 | V3 | 1.059 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |
| 168. | 16.889 | V1 | 1.049 | V2 | 1.053 | V3 | 1.053 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |
| 170. | 17.091 | V1 | 1.043 | V2 | 1.047 | V3 | 1.047 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |
| 172. | 17.293 | V1 | 1.037 | V2 | 1.041 | V3 | 1.041 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |
| 174. | 17.495 | V1 | 1.031 | V2 | 1.035 | V3 | 1.035 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |
| 176. | 17.697 | V1 | 1.025 | V2 | 1.029 | V3 | 1.029 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |
| 178. | 17.899 | V1 | 1.019 | V2 | 1.023 | V3 | 1.023 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |
| 180. | 18.101 | V1 | 1.013 | V2 | 1.017 | V3 | 1.017 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |
| 182. | 18.303 | V1 | 1.007 | V2 | 1.011 | V3 | 1.011 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |
| 184. | 18.505 | V1 | 1.001 | V2 | 1.005 | V3 | 1.005 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |
| 186. | 18.707 | V1 | 0.995 | V2 | 0.999 | V3 | 0.999 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |
| 188. | 18.909 | V1 | 0.989 | V2 | 0.993 | V3 | 0.993 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |
| 190. | 19.111 | V1 | 0.983 | V2 | 0.987 | V3 | 0.987 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |
| 192. | 19.313 | V1 | 0.977 | V2 | 0.981 | V3 | 0.981 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |
| 194. | 19.515 | V1 | 0.971 | V2 | 0.975 | V3 | 0.975 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |
| 196. | 19.717 | V1 | 0.965 | V2 | 0.969 | V3 | 0.969 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |
| 198. | 19.919 | V1 | 0.959 | V2 | 0.963 | V3 | 0.963 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |
| 200. | 20.121 | V1 | 0.953 | V2 | 0.957 | V3 | 0.957 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |
| 202. | 20.323 | V1 | 0.947 | V2 | 0.951 | V3 | 0.951 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |
| 204. | 20.525 | V1 | 0.941 | V2 | 0.945 | V3 | 0.945 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |
| 206. | 20.727 | V1 | 0.935 | V2 | 0.939 | V3 | 0.939 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |
| 208. | 20.929 | V1 | 0.929 | V2 | 0.933 | V3 | 0.933 | V4 | 0.696 | V5 | 1.000 | 1.000 | 0.696 |

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DATE OF RUM IS 08/27/76

PACK NUMBER 15 222A

SHADOW PERIOD IS 2

CYCLE IS

211.

HIGH-V

LOW-V

[illegible]

ORIGINAL PAGE IS
OF POOR QUALITY

DATE OF RUN IS 08/27/76

PACK NUMBER IS 222A

SHADOW PERIOD IS 2

CYCLE IS

211.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 108. | 10.867 | V1 | 1.189 | V2 | 1.188 | V4 | 1.188 | V5 | 1.189 | 1.188 | 1.189 | 1.188 |
| 110. | 10.069 | V1 | 1.187 | V2 | 1.187 | V4 | 1.187 | V5 | 1.187 | 1.187 | 1.187 | 1.187 |
| 112. | 10.271 | V1 | 1.186 | V2 | 1.186 | V4 | 1.186 | V5 | 1.186 | 1.186 | 1.186 | 1.186 |
| 114. | 10.473 | V1 | 1.185 | V2 | 1.185 | V4 | 1.185 | V5 | 1.185 | 1.185 | 1.185 | 1.185 |
| 116. | 10.675 | V1 | 1.184 | V2 | 1.184 | V4 | 1.184 | V5 | 1.184 | 1.184 | 1.184 | 1.184 |
| 118. | 10.877 | V1 | 1.183 | V2 | 1.183 | V4 | 1.183 | V5 | 1.183 | 1.183 | 1.183 | 1.183 |
| 120. | 11.079 | V1 | 1.182 | V2 | 1.182 | V4 | 1.182 | V5 | 1.182 | 1.182 | 1.182 | 1.182 |
| 122. | 11.281 | V1 | 1.181 | V2 | 1.181 | V4 | 1.181 | V5 | 1.181 | 1.181 | 1.181 | 1.181 |
| 124. | 11.483 | V1 | 1.180 | V2 | 1.180 | V4 | 1.180 | V5 | 1.180 | 1.180 | 1.180 | 1.180 |
| 126. | 11.685 | V1 | 1.178 | V2 | 1.178 | V4 | 1.178 | V5 | 1.178 | 1.178 | 1.178 | 1.178 |
| 128. | 11.887 | V1 | 1.177 | V2 | 1.177 | V4 | 1.177 | V5 | 1.177 | 1.177 | 1.177 | 1.177 |
| 130. | 12.089 | V1 | 1.174 | V2 | 1.174 | V4 | 1.174 | V5 | 1.174 | 1.174 | 1.174 | 1.174 |
| 132. | 12.292 | V1 | 1.172 | V2 | 1.172 | V4 | 1.172 | V5 | 1.172 | 1.172 | 1.172 | 1.172 |
| 134. | 12.494 | V1 | 1.170 | V2 | 1.170 | V4 | 1.170 | V5 | 1.170 | 1.170 | 1.170 | 1.170 |
| 136. | 12.697 | V1 | 1.168 | V2 | 1.168 | V4 | 1.168 | V5 | 1.168 | 1.168 | 1.168 | 1.168 |
| 138. | 12.899 | V1 | 1.166 | V2 | 1.166 | V4 | 1.166 | V5 | 1.166 | 1.166 | 1.166 | 1.166 |
| 140. | 13.102 | V1 | 1.164 | V2 | 1.164 | V4 | 1.164 | V5 | 1.164 | 1.164 | 1.164 | 1.164 |
| 142. | 13.304 | V1 | 1.161 | V2 | 1.161 | V4 | 1.161 | V5 | 1.161 | 1.161 | 1.161 | 1.161 |
| 144. | 13.506 | V1 | 1.159 | V2 | 1.159 | V4 | 1.159 | V5 | 1.159 | 1.159 | 1.159 | 1.159 |
| 146. | 13.709 | V1 | 1.157 | V2 | 1.157 | V4 | 1.157 | V5 | 1.157 | 1.157 | 1.157 | 1.157 |
| 148. | 13.910 | V1 | 1.155 | V2 | 1.155 | V4 | 1.155 | V5 | 1.155 | 1.155 | 1.155 | 1.155 |
| 150. | 14.112 | V1 | 1.153 | V2 | 1.153 | V4 | 1.153 | V5 | 1.153 | 1.153 | 1.153 | 1.153 |
| 152. | 14.314 | V1 | 1.151 | V2 | 1.151 | V4 | 1.151 | V5 | 1.151 | 1.151 | 1.151 | 1.151 |
| 154. | 14.516 | V1 | 1.149 | V2 | 1.149 | V4 | 1.149 | V5 | 1.149 | 1.149 | 1.149 | 1.149 |
| 156. | 14.718 | V1 | 1.147 | V2 | 1.147 | V4 | 1.147 | V5 | 1.147 | 1.147 | 1.147 | 1.147 |
| 158. | 14.920 | V1 | 1.145 | V2 | 1.145 | V4 | 1.145 | V5 | 1.145 | 1.145 | 1.145 | 1.145 |
| 160. | 15.122 | V1 | 1.143 | V2 | 1.143 | V4 | 1.143 | V5 | 1.143 | 1.143 | 1.143 | 1.143 |
| 162. | 15.324 | V1 | 1.141 | V2 | 1.141 | V4 | 1.141 | V5 | 1.141 | 1.141 | 1.141 | 1.141 |
| 164. | 15.526 | V1 | 1.139 | V2 | 1.139 | V4 | 1.139 | V5 | 1.139 | 1.139 | 1.139 | 1.139 |
| 166. | 15.728 | V1 | 1.137 | V2 | 1.137 | V4 | 1.137 | V5 | 1.137 | 1.137 | 1.137 | 1.137 |
| 168. | 15.930 | V1 | 1.135 | V2 | 1.135 | V4 | 1.135 | V5 | 1.135 | 1.135 | 1.135 | 1.135 |
| 170. | 16.132 | V1 | 1.133 | V2 | 1.133 | V4 | 1.133 | V5 | 1.133 | 1.133 | 1.133 | 1.133 |
| 172. | 16.334 | V1 | 1.131 | V2 | 1.131 | V4 | 1.131 | V5 | 1.131 | 1.131 | 1.131 | 1.131 |
| 174. | 16.536 | V1 | 1.129 | V2 | 1.129 | V4 | 1.129 | V5 | 1.129 | 1.129 | 1.129 | 1.129 |

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42.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|------|------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 1. | .098 | V1 | .339 | V2 | .337 | V3 | .336 | V4 | .339 | .000 | .339 | .336 |
| 4. | .095 | V1 | .317 | V2 | .318 | V3 | .316 | V4 | .320 | .000 | .320 | .316 |
| 6. | .094 | V1 | .307 | V2 | .309 | V3 | .308 | V4 | .310 | .000 | .310 | .307 |
| 8. | .093 | V1 | .300 | V2 | .299 | V3 | .302 | V4 | .304 | .000 | .304 | .299 |
| 10. | .092 | V1 | .294 | V2 | .296 | V3 | .293 | V4 | .298 | .000 | .298 | .293 |
| 12. | .092 | V1 | .289 | V2 | .290 | V3 | .289 | V4 | .292 | .000 | .292 | .288 |
| 14. | .091 | V1 | .285 | V2 | .287 | V3 | .285 | V4 | .288 | .000 | .288 | .283 |
| 16. | .091 | V1 | .281 | V2 | .282 | V3 | .280 | V4 | .284 | .000 | .284 | .280 |
| 18. | .091 | V1 | .279 | V2 | .279 | V3 | .279 | V4 | .280 | .000 | .280 | .276 |
| 20. | .091 | V1 | .274 | V2 | .276 | V3 | .274 | V4 | .278 | .000 | .278 | .274 |
| 22. | .091 | V1 | .271 | V2 | .273 | V3 | .271 | V4 | .274 | .000 | .274 | .270 |
| 24. | .091 | V1 | .268 | V2 | .270 | V3 | .269 | V4 | .271 | .000 | .271 | .268 |
| 26. | .091 | V1 | .265 | V2 | .267 | V3 | .265 | V4 | .269 | .000 | .269 | .265 |
| 28. | .091 | V1 | .262 | V2 | .264 | V3 | .260 | V4 | .266 | .000 | .266 | .261 |
| 30. | .091 | V1 | .257 | V2 | .259 | V3 | .257 | V4 | .261 | .000 | .261 | .259 |
| 32. | .091 | V1 | .254 | V2 | .257 | V3 | .254 | V4 | .259 | .000 | .259 | .254 |
| 34. | .091 | V1 | .251 | V2 | .253 | V3 | .251 | V4 | .255 | .000 | .255 | .251 |
| 36. | .091 | V1 | .249 | V2 | .250 | V3 | .249 | V4 | .253 | .000 | .253 | .249 |
| 38. | .091 | V1 | .245 | V2 | .248 | V3 | .245 | V4 | .249 | .000 | .249 | .245 |
| 40. | .091 | V1 | .242 | V2 | .245 | V3 | .242 | V4 | .247 | .000 | .247 | .242 |
| 42. | .091 | V1 | .240 | V2 | .242 | V3 | .240 | V4 | .243 | .000 | .243 | .240 |
| 44. | .091 | V1 | .236 | V2 | .239 | V3 | .236 | V4 | .241 | .000 | .241 | .236 |
| 46. | .091 | V1 | .233 | V2 | .236 | V3 | .233 | V4 | .238 | .000 | .238 | .233 |
| 48. | .091 | V1 | .230 | V2 | .233 | V3 | .230 | V4 | .235 | .000 | .235 | .230 |
| 50. | .091 | V1 | .227 | V2 | .230 | V3 | .227 | V4 | .232 | .000 | .232 | .227 |
| 52. | .091 | V1 | .224 | V2 | .227 | V3 | .224 | V4 | .229 | .000 | .229 | .224 |
| 54. | .091 | V1 | .221 | V2 | .224 | V3 | .221 | V4 | .226 | .000 | .226 | .221 |
| 56. | .091 | V1 | .219 | V2 | .220 | V3 | .219 | V4 | .222 | .000 | .222 | .219 |
| 58. | .091 | V1 | .215 | V2 | .217 | V3 | .215 | V4 | .220 | .000 | .220 | .215 |
| 60. | .091 | V1 | .211 | V2 | .213 | V3 | .211 | V4 | .216 | .000 | .216 | .211 |
| 62. | .091 | V1 | .208 | V2 | .209 | V3 | .208 | V4 | .212 | .000 | .212 | .208 |
| 64. | .091 | V1 | .205 | V2 | .207 | V3 | .205 | V4 | .210 | .000 | .210 | .205 |
| 66. | .091 | V1 | .202 | V2 | .205 | V3 | .202 | V4 | .208 | .000 | .208 | .202 |
| 68. | .091 | V1 | .200 | V2 | .201 | V3 | .200 | V4 | .205 | .000 | .205 | .200 |
| 70. | .091 | V1 | .197 | V2 | .198 | V3 | .197 | V4 | .201 | .000 | .201 | .197 |
| 72. | .091 | V1 | .194 | V2 | .196 | V3 | .194 | V4 | .200 | .000 | .200 | .194 |
| 74. | .091 | V1 | .191 | V2 | .193 | V3 | .191 | V4 | .198 | .000 | .198 | .191 |
| 76. | .091 | V1 | .189 | V2 | .191 | V3 | .189 | V4 | .195 | .000 | .195 | .189 |
| 78. | .091 | V1 | .186 | V2 | .188 | V3 | .186 | V4 | .192 | .000 | .192 | .186 |
| 80. | .091 | V1 | .183 | V2 | .185 | V3 | .183 | V4 | .190 | .000 | .190 | .183 |
| 82. | .091 | V1 | .180 | V2 | .182 | V3 | .180 | V4 | .187 | .000 | .187 | .180 |
| 84. | .091 | V1 | .177 | V2 | .179 | V3 | .177 | V4 | .184 | .000 | .184 | .177 |
| 86. | .091 | V1 | .174 | V2 | .176 | V3 | .174 | V4 | .181 | .000 | .181 | .174 |
| 88. | .091 | V1 | .171 | V2 | .173 | V3 | .171 | V4 | .178 | .000 | .178 | .171 |
| 90. | .091 | V1 | .168 | V2 | .170 | V3 | .168 | V4 | .175 | .000 | .175 | .168 |
| 92. | .091 | V1 | .165 | V2 | .167 | V3 | .165 | V4 | .172 | .000 | .172 | .165 |
| 94. | .091 | V1 | .162 | V2 | .164 | V3 | .162 | V4 | .169 | .000 | .169 | .162 |
| 96. | .091 | V1 | .159 | V2 | .161 | V3 | .159 | V4 | .166 | .000 | .166 | .159 |
| 98. | .091 | V1 | .156 | V2 | .158 | V3 | .156 | V4 | .163 | .000 | .163 | .156 |
| 100. | .091 | V1 | .153 | V2 | .155 | V3 | .153 | V4 | .160 | .000 | .160 | .153 |
| 102. | .091 | V1 | .150 | V2 | .152 | V3 | .150 | V4 | .157 | .000 | .157 | .150 |
| 104. | .091 | V1 | .147 | V2 | .149 | V3 | .147 | V4 | .154 | .000 | .154 | .147 |
| 106. | .091 | V1 | .144 | V2 | .146 | V3 | .144 | V4 | .151 | .000 | .151 | .144 |
| 108. | .091 | V1 | .141 | V2 | .143 | V3 | .141 | V4 | .148 | .000 | .148 | .141 |
| 110. | .091 | V1 | .138 | V2 | .140 | V3 | .138 | V4 | .145 | .000 | .145 | .138 |

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PAGE IS 43.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 2. | 230 | V1 | 77 | V2 | 178 | V3 | 180 | V4 | 178 | V5 | 1.179 | 1.180 | 1.178 |
| 4. | 231 | V1 | 77 | V2 | 177 | V3 | 177 | V4 | 177 | V5 | 1.179 | 1.179 | 1.177 |
| 6. | 232 | V1 | 77 | V2 | 176 | V3 | 176 | V4 | 176 | V5 | 1.177 | 1.177 | 1.174 |
| 8. | 233 | V1 | 77 | V2 | 172 | V3 | 173 | V4 | 176 | V5 | 1.176 | 1.176 | 1.172 |
| 10. | 234 | V1 | 77 | V2 | 171 | V3 | 172 | V4 | 174 | V5 | 1.174 | 1.174 | 1.170 |
| 12. | 235 | V1 | 77 | V2 | 169 | V3 | 170 | V4 | 172 | V5 | 1.170 | 1.172 | 1.168 |
| 14. | 236 | V1 | 77 | V2 | 165 | V3 | 167 | V4 | 171 | V5 | 1.167 | 1.171 | 1.165 |
| 16. | 238 | V1 | 77 | V2 | 162 | V3 | 163 | V4 | 169 | V5 | 1.163 | 1.169 | 1.160 |
| 18. | 239 | V1 | 77 | V2 | 157 | V3 | 160 | V4 | 166 | V5 | 1.158 | 1.166 | 1.154 |
| 20. | 240 | V1 | 77 | V2 | 150 | V3 | 154 | V4 | 162 | V5 | 1.152 | 1.162 | 1.146 |
| 22. | 241 | V1 | 77 | V2 | 142 | V3 | 147 | V4 | 159 | V5 | 1.143 | 1.159 | 1.132 |
| 24. | 242 | V1 | 77 | V2 | 130 | V3 | 135 | V4 | 152 | V5 | 1.131 | 1.152 | 1.119 |
| 26. | 243 | V1 | 77 | V2 | 116 | V3 | 120 | V4 | 145 | V5 | 1.120 | 1.145 | 1.110 |
| 28. | 244 | V1 | 77 | V2 | 107 | V3 | 108 | V4 | 129 | V5 | 1.109 | 1.129 | 1.102 |
| 30. | 245 | V1 | 77 | V2 | 100 | V3 | 101 | V4 | 113 | V5 | 1.101 | 1.113 | 1.094 |
| 32. | 246 | V1 | 77 | V2 | 094 | V3 | 096 | V4 | 103 | V5 | 1.094 | 1.103 | 1.087 |
| 34. | 247 | V1 | 77 | V2 | 081 | V3 | 083 | V4 | 097 | V5 | 1.087 | 1.097 | 1.080 |
| 36. | 248 | V1 | 77 | V2 | 081 | V3 | 083 | V4 | 090 | V5 | 1.080 | 1.090 | 1.072 |
| 38. | 249 | V1 | 77 | V2 | 071 | V3 | 074 | V4 | 081 | V5 | 1.071 | 1.081 | 1.065 |
| 40. | 250 | V1 | 77 | V2 | 059 | V3 | 061 | V4 | 069 | V5 | 1.067 | 1.074 | 1.059 |
| 42. | 251 | V1 | 77 | V2 | 055 | V3 | 056 | V4 | 060 | V5 | 1.061 | 1.067 | 1.055 |
| 44. | 252 | V1 | 77 | V2 | 051 | V3 | 054 | V4 | 056 | V5 | 1.054 | 1.060 | 1.050 |
| 46. | 253 | V1 | 77 | V2 | 044 | V3 | 044 | V4 | 050 | V5 | 1.051 | 1.055 | 1.047 |
| 48. | 254 | V1 | 77 | V2 | 041 | V3 | 041 | V4 | 049 | V5 | 1.044 | 1.049 | 1.040 |
| 50. | 255 | V1 | 77 | V2 | 037 | V3 | 037 | V4 | 047 | V5 | 1.041 | 1.047 | 1.036 |
| 52. | 256 | V1 | 77 | V2 | 031 | V3 | 031 | V4 | 042 | V5 | 1.035 | 1.042 | 1.030 |
| 54. | 257 | V1 | 77 | V2 | 027 | V3 | 027 | V4 | 039 | V5 | 1.029 | 1.039 | 1.021 |
| 56. | 258 | V1 | 77 | V2 | 021 | V3 | 021 | V4 | 033 | V5 | 1.021 | 1.033 | 1.010 |
| 58. | 259 | V1 | 77 | V2 | 017 | V3 | 017 | V4 | 030 | V5 | 1.017 | 1.030 | 1.000 |
| 60. | 260 | V1 | 77 | V2 | 000 | V3 | 000 | V4 | 026 | V5 | 1.004 | 1.023 | 0.983 |
| 62. | 261 | V1 | 77 | V2 | 983 | V3 | 999 | V4 | 021 | V5 | 0.982 | 1.007 | 0.954 |
| 64. | 262 | V1 | 77 | V2 | 954 | V3 | 959 | V4 | 003 | V5 | 0.839 | 0.976 | 0.608 |
| 66. | 263 | V1 | 77 | V2 | 957 | V3 | 810 | V4 | 000 | V5 | 0.976 | 0.976 | 0.608 |
| 68. | 264 | V1 | 77 | V2 | 903 | V3 | 475 | V4 | 073 | V5 | 0.922 | 0.922 | 0.073 |

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DATE OF RUN IS 09/10/76

PACK NUMBER IS 222A

SHADOW PERIOD IS 7

CYCLE IS

1312.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 1355. | .239 | V1 | 1.333 | V2 | 1.335 | V3 | 1.341 | V4 | 1.339 | V5 | .288 | 1.328 | 1.288 |
| 1358. | .478 | V1 | 1.331 | V2 | 1.334 | V3 | 1.324 | V4 | 1.322 | V5 | .246 | 1.305 | 1.246 |
| 1405. | .194 | V1 | 1.338 | V2 | 1.340 | V3 | 1.325 | V4 | 1.321 | V5 | .000 | 1.271 | 1.198 |
| 1412. | .910 | V1 | 1.273 | V2 | 1.278 | V3 | 1.278 | V4 | 1.275 | V5 | .000 | 1.273 | 1.255 |
| 1419. | .629 | V1 | 1.261 | V2 | 1.265 | V3 | 1.265 | V4 | 1.263 | V5 | .000 | 1.239 | 1.220 |
| 1429. | .346 | V1 | 1.240 | V2 | 1.241 | V3 | 1.244 | V4 | 1.241 | V5 | .000 | 1.224 | 1.200 |
| 1434. | .063 | V1 | 1.229 | V2 | 1.231 | V3 | 1.232 | V4 | 1.229 | V5 | .000 | 1.206 | 1.175 |
| 1441. | .780 | V1 | 1.223 | V2 | 1.220 | V3 | 1.220 | V4 | 1.217 | V5 | .000 | 1.187 | 1.168 |
| 1448. | .497 | V1 | 1.214 | V2 | 1.207 | V3 | 1.207 | V4 | 1.205 | V5 | .000 | 1.168 | 1.148 |
| 1455. | .931 | V1 | 1.193 | V2 | 1.177 | V3 | 1.195 | V4 | 1.194 | V5 | .000 | 1.148 | 1.125 |
| 1503. | .214 | V1 | 1.185 | V2 | 1.162 | V3 | 1.188 | V4 | 1.186 | V5 | .000 | 1.125 | 1.105 |
| 1510. | .648 | V1 | 1.183 | V2 | 1.151 | V3 | 1.185 | V4 | 1.185 | V5 | .000 | 1.105 | 1.092 |
| 1517. | .126 | V1 | 1.182 | V2 | 1.145 | V3 | 1.184 | V4 | 1.184 | V5 | .000 | 1.092 | 1.085 |
| 1524. | .365 | V1 | 1.178 | V2 | 1.145 | V3 | 1.179 | V4 | 1.180 | V5 | .000 | 1.085 | 1.184 |
| 1531. | .082 | V1 | 1.173 | V2 | 1.145 | V3 | 1.173 | V4 | 1.177 | V5 | .000 | 1.061 | 1.180 |
| 1539. | .799 | V1 | 1.164 | V2 | 1.068 | V3 | 1.161 | V4 | 1.170 | V5 | .000 | 1.036 | 1.177 |
| 1539. | 10.516 | V1 | 1.164 | V2 | 1.068 | V3 | 1.161 | V4 | 1.170 | V5 | .469 | 1.006 | 1.170 |

DATE OF RUN IS 09/10/76

PACK NUMBER IS 222A

SHADOW PERIOD IS 8

CYCLE IS 1591.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|-------|------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 849. | .230 | V1 | 1.334 | V2 | 1.333 | V3 | 1.339 | V4 | 1.338 | V5 | 1.272 | .000 |
| 852. | .470 | V1 | 1.317 | V2 | 1.313 | V3 | 1.322 | V4 | 1.320 | V5 | 1.223 | .000 |
| 854. | .710 | V1 | 1.304 | V2 | 1.299 | V3 | 1.300 | V4 | 1.307 | V5 | 1.195 | .000 |
| 856. | .950 | V1 | 1.274 | V2 | 1.288 | V3 | 1.300 | V4 | 1.297 | V5 | 1.176 | .000 |
| 904. | .660 | V1 | 1.267 | V2 | 1.255 | V3 | 1.280 | V4 | 1.277 | V5 | 1.143 | .000 |
| 911. | .380 | V1 | 1.249 | V2 | 1.268 | V3 | 1.266 | V4 | 1.263 | V5 | 1.111 | .000 |
| 918. | .090 | V1 | 1.244 | V2 | 1.243 | V3 | 1.251 | V4 | 1.251 | V5 | 1.074 | .000 |
| 925. | .810 | V1 | 1.234 | V2 | 1.233 | V3 | 1.240 | V4 | 1.228 | V5 | 1.033 | .000 |
| 932. | .230 | V1 | 1.214 | V2 | 1.221 | V3 | 1.209 | V4 | 1.217 | V5 | .992 | .000 |
| 940. | .520 | V1 | 1.204 | V2 | 1.197 | V3 | 1.200 | V4 | 1.205 | V5 | .948 | .000 |
| 947. | .660 | V1 | 1.192 | V2 | 1.183 | V3 | 1.199 | V4 | 1.194 | V5 | .885 | .000 |
| 954. | .950 | V1 | 1.204 | V2 | 1.183 | V3 | 1.186 | V4 | 1.185 | V5 | .780 | .000 |
| 1001. | .380 | V1 | 1.181 | V2 | 1.155 | V3 | 1.180 | V4 | 1.180 | V5 | .668 | .000 |
| 1008. | .090 | V1 | 1.177 | V2 | 1.127 | V3 | 1.173 | V4 | 1.176 | V5 | .573 | .000 |
| 1016. | .310 | V1 | 1.171 | V2 | 1.127 | V3 | 1.173 | V4 | 1.176 | V5 | .475 | .000 |

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OF POOR QUALITY

DATE OF RUN IS 09/10/76

PACK NUMBER IS 222A

SHADOW PERIOD IS 9

CYCLE IS 1773.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 849. | .230 | V1 | 1.334 | V2 | 1.332 | V3 | 1.339 | V4 | 1.337 | V5 | 1.259 | .000 |
| 852. | .470 | V1 | 1.313 | V2 | 1.313 | V3 | 1.323 | V4 | 1.319 | V5 | 1.212 | .000 |
| 901. | 1.420 | V1 | 1.284 | V2 | 1.274 | V3 | 1.287 | V4 | 1.282 | V5 | 1.136 | .000 |
| 911. | 2.380 | V1 | 1.264 | V2 | 1.255 | V3 | 1.266 | V4 | 1.262 | V5 | 1.087 | .000 |
| 920. | 3.330 | V1 | 1.240 | V2 | 1.240 | V3 | 1.251 | V4 | 1.247 | V5 | 1.029 | .000 |
| 930. | 4.280 | V1 | 1.222 | V2 | 1.214 | V3 | 1.225 | V4 | 1.222 | V5 | .967 | .000 |
| 931. | 4.990 | V1 | 1.214 | V2 | 1.206 | V3 | 1.217 | V4 | 1.214 | V5 | .908 | .000 |
| 940. | 5.230 | V1 | 1.214 | V2 | 1.206 | V3 | 1.217 | V4 | 1.214 | V5 | .880 | .000 |
| 942. | 5.470 | V1 | 1.205 | V2 | 1.197 | V3 | 1.208 | V4 | 1.206 | V5 | .880 | .000 |
| 947. | 5.950 | V1 | 1.205 | V2 | 1.197 | V3 | 1.208 | V4 | 1.206 | V5 | .880 | .000 |
| 949. | 6.190 | V1 | 1.205 | V2 | 1.197 | V3 | 1.208 | V4 | 1.206 | V5 | .880 | .000 |
| 959. | 7.200 | V1 | 1.181 | V2 | 1.168 | V3 | 1.183 | V4 | 1.176 | V5 | .880 | .000 |
| 1008. | 8.210 | V1 | 1.168 | V2 | 1.154 | V3 | 1.169 | V4 | 1.168 | V5 | .880 | .000 |
| 1018. | 9.220 | V1 | 1.151 | V2 | 1.137 | V3 | 1.151 | V4 | 1.144 | V5 | .880 | .000 |
| 1028. | 10.220 | V1 | 1.096 | V2 | 1.088 | V3 | 1.091 | V4 | 1.092 | V5 | .880 | .000 |
| 1037. | 11.230 | V1 | 1.064 | V2 | 1.040 | V3 | 1.062 | V4 | 1.063 | V5 | .880 | .000 |
| 1047. | 12.240 | V1 | 1.048 | V2 | 1.024 | V3 | 1.051 | V4 | 1.050 | V5 | .880 | .000 |
| 1056. | 13.250 | V1 | 1.037 | V2 | 1.002 | V3 | 1.040 | V4 | 1.039 | V5 | .880 | .000 |
| 1106. | 14.260 | V1 | 1.019 | V2 | .978 | V3 | 1.019 | V4 | 1.020 | V5 | .880 | .000 |
| 1116. | 15.260 | V1 | .984 | V2 | .931 | V3 | .990 | V4 | .992 | V5 | .880 | .000 |
| 1125. | 16.270 | V1 | .931 | V2 | .767 | V3 | .937 | V4 | .953 | V5 | .880 | .000 |
| 1135. | 17.280 | V1 | .564 | V2 | .420 | V3 | .676 | V4 | | V5 | .880 | .000 |

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| 26 | 2 |
| 27 | 1 |
| 28 | 8 |
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| 30 | 0 |
| 31 | 0 |
| 32 | 0 |
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| 39 | 6 |
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| 43 | 5 |
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| 55 | 2 |
| 56 | 1 |
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| DATE | OF | RUN IS | 09/16/76 | AVE-DIS | LOW-DIS | HIGH-CHAR | AVE-CHAR | LOW-CHAR | AHQ | AHI |
|------|------|----------|----------|------------|---------|-----------|----------|----------|-------|-------|
| 222A | DAY | HIGH-DIS | 1.270 | 1.269 | 1.267 | 1.513 | 1.459 | 1.434 | 2.370 | 7.210 |
| 222A | 601. | 1.288 | 1.287 | 1.285 | 1.513 | 1.459 | 1.434 | 2.370 | 7.210 | 5.900 |
| 1 | | .00738 | 1.55000 | 1.14.50000 | 1.19500 | 156.30000 | | | | |
| 2 | | .23770 | 14.50000 | 3.10000 | .81000 | 148.40000 | | | | |

WQEC/C 77-134

ORIGINAL PAGE IS
OF POOR QUALITY

| OF | HUE | IS | OR | 27/76 | AVE-DIS | LOW-DIS | HIGH-CHAR | AVE-CHAR | LOW-CHAR | AHO | AHI |
|-----|-----|-----|-----|-------|---------|---------|-----------|----------|----------|-----|-----|
| DAY | DIS | HIC | DIS | DIS | | | | | | | |
| 737 | 267 | 267 | 267 | 267 | 267 | 267 | 267 | 267 | 267 | 267 | 267 |
| 738 | 268 | 268 | 268 | 268 | 268 | 268 | 268 | 268 | 268 | 268 | 268 |
| 739 | 269 | 269 | 269 | 269 | 269 | 269 | 269 | 269 | 269 | 269 | 269 |
| 740 | 270 | 270 | 270 | 270 | 270 | 270 | 270 | 270 | 270 | 270 | 270 |
| 741 | 271 | 271 | 271 | 271 | 271 | 271 | 271 | 271 | 271 | 271 | 271 |
| 742 | 272 | 272 | 272 | 272 | 272 | 272 | 272 | 272 | 272 | 272 | 272 |
| 743 | 273 | 273 | 273 | 273 | 273 | 273 | 273 | 273 | 273 | 273 | 273 |
| 744 | 274 | 274 | 274 | 274 | 274 | 274 | 274 | 274 | 274 | 274 | 274 |
| 745 | 275 | 275 | 275 | 275 | 275 | 275 | 275 | 275 | 275 | 275 | 275 |
| 746 | 276 | 276 | 276 | 276 | 276 | 276 | 276 | 276 | 276 | 276 | 276 |
| 747 | 277 | 277 | 277 | 277 | 277 | 277 | 277 | 277 | 277 | 277 | 277 |
| 748 | 278 | 278 | 278 | 278 | 278 | 278 | 278 | 278 | 278 | 278 | 278 |
| 749 | 279 | 279 | 279 | 279 | 279 | 279 | 279 | 279 | 279 | 279 | 279 |
| 750 | 280 | 280 | 280 | 280 | 280 | 280 | 280 | 280 | 280 | 280 | 280 |
| 751 | 281 | 281 | 281 | 281 | 281 | 281 | 281 | 281 | 281 | 281 | 281 |
| 752 | 282 | 282 | 282 | 282 | 282 | 282 | 282 | 282 | 282 | 282 | 282 |
| 753 | 283 | 283 | 283 | 283 | 283 | 283 | 283 | 283 | 283 | 283 | 283 |
| 754 | 284 | 284 | 284 | 284 | 284 | 284 | 284 | 284 | 284 | 284 | 284 |
| 755 | 285 | 285 | 285 | 285 | 285 | 285 | 285 | 285 | 285 | 285 | 285 |
| 756 | 286 | 286 | 286 | 286 | 286 | 286 | 286 | 286 | 286 | 286 | 286 |
| 757 | 287 | 287 | 287 | 287 | 287 | 287 | 287 | 287 | 287 | 287 | 287 |
| 758 | 288 | 288 | 288 | 288 | 288 | 288 | 288 | 288 | 288 | 288 | 288 |
| 759 | 289 | 289 | 289 | 289 | 289 | 289 | 289 | 289 | 289 | 289 | 289 |
| 760 | 290 | 290 | 290 | 290 | 290 | 290 | 290 | 290 | 290 | 290 | 290 |
| 761 | 291 | 291 | 291 | 291 | 291 | 291 | 291 | 291 | 291 | 291 | 291 |
| 762 | 292 | 292 | 292 | 292 | 292 | 292 | 292 | 292 | 292 | 292 | 292 |
| 763 | 293 | 293 | 293 | 293 | 293 | 293 | 293 | 293 | 293 | 293 | 293 |
| 764 | 294 | 294 | 294 | 294 | 294 | 294 | 294 | 294 | 294 | 294 | 294 |
| 765 | 295 | 295 | 295 | 295 | 295 | 295 | 295 | 295 | 295 | 295 | 295 |
| 766 | 296 | 296 | 296 | 296 | 296 | 296 | 296 | 296 | 296 | 296 | 296 |
| 767 | 297 | 297 | 297 | 297 | 297 | 297 | 297 | 297 | 297 | 297 | 297 |
| 768 | 298 | 298 | 298 | 298 | 298 | 298 | 298 | 298 | 298 | 298 | 298 |
| 769 | 299 | 299 | 299 | 299 | 299 | 299 | 299 | 299 | 299 | 299 | 299 |
| 770 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| 771 | 301 | 301 | 301 | 301 | 301 | 301 | 301 | 301 | 301 | 301 | 301 |
| 772 | 302 | 302 | 302 | 302 | 302 | 302 | 302 | 302 | 302 | 302 | 302 |
| 773 | 303 | 303 | 303 | 303 | 303 | 303 | 303 | 303 | 303 | 303 | 303 |
| 774 | 304 | 304 | 304 | 304 | 304 | 304 | 304 | 304 | 304 | 304 | 304 |
| 775 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 | 305 |
| 776 | 306 | 306 | 306 | 306 | 306 | 306 | 306 | 306 | 306 | 306 | 306 |
| 777 | 307 | 307 | 307 | 307 | 307 | 307 | 307 | 307 | 307 | 307 | 307 |
| 778 | 308 | 308 | 308 | 308 | 308 | 308 | 308 | 308 | 308 | 308 | 308 |
| 779 | 309 | 309 | 309 | 309 | 309 | 309 | 309 | 309 | 309 | 309 | 309 |
| 780 | 310 | 310 | 310 | 310 | 310 | 310 | 310 | 310 | 310 | 310 | 310 |
| 781 | 311 | 311 | 311 | 311 | 311 | 311 | 311 | 311 | 311 | 311 | 311 |
| 782 | 312 | 312 | 312 | 312 | 312 | 312 | 312 | 312 | 312 | 312 | 312 |
| 783 | 313 | 313 | 313 | 313 | 313 | 313 | 313 | 313 | 313 | 313 | 313 |
| 784 | 314 | 314 | 314 | 314 | 314 | 314 | 314 | 314 | 314 | 314 | 314 |
| 785 | 315 | 315 | 315 | 315 | 315 | 315 | 315 | 315 | 315 | 315 | 315 |
| 786 | 316 | 316 | 316 | 316 | 316 | 316 | 316 | 316 | 316 | 316 | 316 |
| 787 | 317 | 317 | 317 | 317 | 317 | 317 | 317 | 317 | 317 | 317 | 317 |
| 788 | 318 | 318 | 318 | 318 | 318 | 318 | 318 | 318 | 318 | 318 | 318 |
| 789 | 319 | 319 | 319 | 319 | 319 | 319 | 319 | 319 | 319 | 319 | 319 |
| 790 | 320 | 320 | 320 | 320 | 320 | 320 | 320 | 320 | 320 | 320 | 320 |
| 791 | 321 | 321 | 321 | 321 | 321 | 321 | 321 | 321 | 321 | 321 | 321 |
| 792 | 322 | 322 | 322 | 322 | 322 | 322 | 322 | 322 | 322 | 322 | 322 |
| 793 | 323 | 323 | 323 | 323 | 323 | 323 | 323 | 323 | 323 | 323 | 323 |
| 794 | 324 | 324 | 324 | 324 | 324 | 324 | 324 | 324 | 324 | 324 | 324 |
| 795 | 325 | 325 | 325 | 325 | 325 | 325 | 325 | 325 | 325 | 325 | 325 |
| 796 | 326 | 326 | 326 | 326 | 326 | 326 | 326 | 326 | 326 | 326 | 326 |
| 797 | 327 | 327 | 327 | 327 | 327 | 327 | 327 | 327 | 327 | 327 | 327 |
| 798 | 328 | 328 | 328 | 328 | 328 | 328 | 328 | 328 | 328 | 328 | 328 |
| 799 | 329 | 329 | 329 | 329 | 329 | 329 | 329 | 329 | 329 | 329 | 329 |
| 800 | 330 | 330 | 330 | 330 | 330 | 330 | 330 | 330 | 330 | 330 | 330 |

ORIGINAL PAGE IN
OF POOR QUALITY

| DATE OF RUN | IS 08/27/76 | AVE-DIS | LOW-DIS | HIGH-CHAR | AVE-CHAR | LCW-CHAR | AHO | AHI |
|-------------|-------------|---------|---------|-----------|----------|----------|------|-----|
| 2222A | 1136. | 270 | 180 | 491 | 454 | 430 | 550 | 850 |
| 2222A | 1292. | 272 | 195 | 433 | 409 | 399 | 554 | 500 |
| 2222A | 1293. | 253 | 169 | 427 | 403 | 388 | 388 | 500 |
| 2222A | 1294. | 234 | 131 | 474 | 432 | 415 | 500 | 500 |
| 2222A | 1295. | 229 | 100 | 479 | 435 | 415 | 500 | 500 |
| 2222A | 1297. | 212 | 032 | 507 | 452 | 423 | 500 | 500 |
| 2222A | 1298. | 209 | 017 | 504 | 447 | 419 | 541 | 350 |
| 2222A | 1299. | 207 | 000 | 514 | 453 | 419 | 780 | 000 |
| 2222A | 1301. | 200 | 960 | 512 | 454 | 423 | 019 | 800 |
| 2222A | 1303. | 99 | 942 | 503 | 454 | 431 | 676 | 160 |
| 2222A | 1305. | 96 | 917 | 491 | 454 | 435 | 976 | 690 |
| 2222A | 1306. | 97 | 919 | 486 | 455 | 434 | 453 | 680 |
| 2222A | 1308. | 95 | 892 | 470 | 454 | 434 | 451 | 130 |
| 2222A | 1309. | 92 | 869 | 501 | 454 | 435 | 693 | 530 |
| 2222A | 1310. | 193 | 866 | 498 | 454 | 435 | 935 | 030 |
| 2222A | 1311. | 191 | 847 | 503 | 454 | 433 | 931 | 650 |
| 2222A | 1314. | 206 | 848 | 499 | 455 | 431 | 170 | 520 |
| 2222A | 1315. | 207 | 885 | 496 | 454 | 431 | 7170 | 260 |
| 2222A | 1317. | 207 | 906 | 494 | 454 | 431 | 933 | 170 |
| 2222A | 1318. | 203 | 891 | 492 | 454 | 430 | 692 | 900 |
| 2222A | 1320. | 207 | 912 | 494 | 454 | 431 | 692 | 440 |
| 2222A | 1321. | 210 | 934 | 493 | 454 | 431 | 453 | 700 |
| 2222A | 1323. | 216 | 964 | 491 | 454 | 432 | 214 | 950 |
| 2222A | 1324. | 218 | 977 | 490 | 455 | 432 | 733 | 170 |
| 2222A | 1325. | 221 | 991 | 491 | 455 | 430 | 495 | 940 |
| 2222A | 1327. | 223 | 005 | 490 | 454 | 431 | 256 | 920 |
| 2222A | 1328. | 228 | 029 | 485 | 455 | 434 | 014 | 000 |
| 2222A | 1329. | 236 | 056 | 486 | 454 | 432 | 557 | 080 |
| 2222A | 1330. | 243 | 081 | 486 | 455 | 432 | 055 | 560 |
| 2222A | 1331. | 263 | 146 | 480 | 454 | 430 | 388 | 080 |
| 2222A | 1333. | 282 | 175 | 485 | 454 | 431 | 388 | 670 |
| 2222A | 1334. | 232 | 096 | 485 | 455 | 431 | 430 | 210 |
| 2222A | 1335. | 226 | 082 | 496 | 456 | 428 | 490 | 770 |
| 2222A | 1337. | 310 | 071 | 503 | 456 | 428 | 380 | 500 |
| 2222A | 1338. | 205 | 027 | 497 | 456 | 428 | 100 | 280 |
| 2222A | 1339. | 200 | 010 | 483 | 457 | 431 | 580 | 000 |
| 2222A | 1340. | 99 | 986 | 479 | 456 | 429 | 240 | 400 |
| 2222A | 1341. | 97 | 969 | 490 | 456 | 429 | 770 | 190 |
| 2222A | 1342. | 96 | 957 | 499 | 457 | 431 | 010 | 500 |
| 2222A | 1343. | 96 | 946 | 488 | 458 | 439 | 250 | 910 |
| 2222A | 1344. | 144 | 937 | 492 | 456 | 432 | 480 | 320 |
| 2222A | 1345. | 141 | 926 | 498 | 456 | 436 | 720 | 020 |
| 2222A | 1346. | 138 | 909 | 497 | 455 | 436 | 430 | 500 |
| 2222A | 1347. | 120 | 859 | 493 | 457 | 436 | 430 | 190 |
| 2222A | 1348. | 116 | 833 | 496 | 457 | 435 | 670 | 840 |
| 2222A | 1349. | 110 | 807 | 492 | 457 | 440 | 660 | 760 |
| 2222A | 1350. | 109 | 801 | 502 | 458 | 435 | 148 | 430 |
| 2222A | 1351. | 689 | 714 | 496 | 457 | 434 | 440 | 500 |
| 2222A | 1352. | 093 | 682 | 500 | 456 | 433 | 150 | 750 |
| 2222A | 1353. | 084 | 654 | 500 | 456 | 433 | 500 | 470 |
| 2222A | 1354. | 084 | 654 | 500 | 456 | 433 | 660 | 200 |
| 2222A | 1355. | 128 | 850 | 506 | 456 | 433 | 690 | 000 |
| 2222A | 1356. | 202 | 855 | 500 | 456 | 434 | 550 | 710 |
| 2222A | 1357. | 205 | 860 | 503 | 456 | 433 | 510 | 480 |
| 2222A | 1358. | 096 | 865 | 502 | 456 | 433 | 970 | 400 |
| 2222A | 1359. | 136 | 892 | 506 | 457 | 433 | 730 | 760 |
| 2222A | 1360. | 43 | 913 | 507 | 457 | 433 | 490 | 200 |
| 2222A | 1361. | 211 | 927 | 506 | 457 | 433 | 260 | 700 |
| 2222A | 1362. | 52 | 948 | 500 | 457 | 433 | 780 | 620 |
| 2222A | 1363. | 59 | 970 | 497 | 456 | 433 | 540 | 650 |
| 2222A | 1364. | 66 | 987 | 497 | 457 | 433 | | |
| 2222A | 1365. | 73 | | 497 | | | | |

WQEC/C 77-134

DATE OF RUN IS 05/27/76

PACK DAY HIGH-DIS

AVE-DIS

LOW-DIS

HIGH-CHAR

AVE-CHAR

LOW-CHAR

AHO

AHI

WQEC/C.77-134

222A 1611.
222A 1612.
1
2

1.248
1.277
1.55000
28.00000

1.204
1.241
60.40000
6.00000

1.045
1.112
1.65400
1.10000

1.501
1.507
157.30000
280.00000

1.457
1.458
1.430
1.428

2.750
1.460

11.700
10.600

ORIGINAL PAGE IS
OF POOR QUALITY

WQEC/C 77-134

| DATE OF RUN | IS | 07/19/76 | CURRENT |
|-------------|-------|----------|---------|
| 222A | 737. | | 450 |
| 222A | 738. | | 470 |
| 222A | 741. | | 310 |
| 222A | 742. | | 250 |
| 222A | 743. | | 260 |
| 222A | 744. | | 260 |
| 222A | 745. | | 260 |
| 222A | 747. | | 260 |
| 222A | 749. | | 260 |
| 222A | 750. | | 280 |
| 222A | 751. | | 300 |
| 222A | 752. | | 280 |
| 222A | 753. | | 300 |
| 222A | 754. | | 300 |
| 222A | 755. | | 300 |
| 222A | 757. | | 330 |
| 222A | 759. | | 290 |
| 222A | 760. | | 250 |
| 222A | 761. | | 280 |
| 222A | 762. | | 280 |
| 222A | 763. | | 290 |
| 222A | 764. | | 290 |
| 222A | 766. | | 300 |
| 222A | 767. | | 280 |
| 222A | 769. | | 260 |
| 222A | 771. | | 230 |
| 222A | 773. | | 230 |
| 222A | 775. | | 230 |
| 222A | 776. | | 240 |
| 222A | 779. | | 200 |
| 222A | 1095. | | 585 |
| 222A | 1096. | | 585 |
| 222A | 1097. | | 652 |
| 222A | 1098. | | 750 |
| 222A | 1100. | | 700 |
| 222A | 1102. | | 650 |
| 222A | 1104. | | 465 |
| 222A | 1105. | | 465 |
| 222A | 1106. | | 488 |
| 222A | 1107. | | 488 |
| 222A | 1109. | | 510 |
| 222A | 1111. | | 405 |
| 222A | 1112. | | 400 |
| 222A | 1113. | | 337 |
| 222A | 1114. | | 398 |
| 222A | 1116. | | 495 |
| 222A | 1117. | | 457 |
| 222A | 1118. | | 442 |
| 222A | 1120. | | 430 |
| 222A | 1121. | | 420 |



11111111

15

MQEC/C 77-134

DATE OF RUN 15 07/19/76

PACK DAY CURRENT

| | | |
|------|--------|-----------|
| 222A | 1584. | .404 |
| 222A | 1585. | .337 |
| 222A | 1586. | .337 |
| 222A | 1587. | .322 |
| 222A | 1590. | .310 |
| 222A | 1592. | .307 |
| 222A | 1593. | .314 |
| 222A | 1594. | .307 |
| 222A | 1596. | .419 |
| 222A | 1597. | .415 |
| 222A | 1599. | .412 |
| 222A | 1600. | .397 |
| 222A | 1601. | .367 |
| 222A | 1602. | .350 |
| 222A | 1603. | .360 |
| 222A | 1604. | .370 |
| 222A | 1606. | .397 |
| 222A | 1607. | .404 |
| 222A | 1611. | .442 |
| 222A | 1612. | .457 |
| 1 | .01803 | 1.20000 |
| | | 15.00000 |
| | | .20000 |
| | | 125.00000 |

| DATE OF RUN | IS 08/27/76 | HIGH-DIS | AVE-DIS | LOW-DIS | HIGH-CHAR | AVE-CHAR | LOW-CHAR | AHO | AHI |
|-------------|-------------|----------|----------|---------|-----------|----------|----------|-------|--------|
| 2222A | 1753. | 1.217 | 1.206 | 1.197 | 1.466 | 1.452 | 1.437 | 1.428 | 10.830 |
| 2222A | 1754. | 1.251 | 1.240 | 1.230 | 1.426 | 1.423 | 1.417 | 2.382 | 7.377 |
| 2222A | 1755. | 1.219 | 1.213 | 1.206 | 1.426 | 1.423 | 1.417 | 3.094 | 8.154 |
| 2222A | 1757. | 1.202 | 1.199 | 1.193 | 1.429 | 1.423 | 1.415 | 4.046 | 8.594 |
| 2222A | 1758. | 1.197 | 1.193 | 1.187 | 1.429 | 1.423 | 1.417 | 4.522 | 8.591 |
| 2222A | 1759. | 1.196 | 1.192 | 1.185 | 1.429 | 1.423 | 1.414 | 4.759 | 8.737 |
| 2222A | 1761. | 1.193 | 1.188 | 1.181 | 1.428 | 1.423 | 1.416 | 5.236 | 9.230 |
| 2222A | 1762. | 1.191 | 1.187 | 1.179 | 1.428 | 1.422 | 1.415 | 5.474 | 9.500 |
| 2222A | 1764. | 1.187 | 1.182 | 1.175 | 1.431 | 1.422 | 1.414 | 5.950 | 10.050 |
| 2222A | 1766. | 1.183 | 1.178 | 1.169 | 1.430 | 1.424 | 1.419 | 6.426 | 10.300 |
| 2222A | 1768. | 1.182 | 1.177 | 1.166 | 1.424 | 1.418 | 1.413 | 6.486 | 10.700 |
| 2222A | 1769. | 1.183 | 1.179 | 1.169 | 1.473 | 1.447 | 1.436 | 6.664 | 11.100 |
| 2222A | 1770. | 1.186 | 1.181 | 1.171 | 1.466 | 1.449 | 1.438 | 6.662 | 11.570 |
| 2222A | 1771. | 1.186 | 1.181 | 1.171 | 1.462 | 1.447 | 1.435 | 6.901 | 11.900 |
| 2222A | 1772. | 1.187 | 1.182 | 1.172 | 1.460 | 1.447 | 1.434 | 6.902 | 12.190 |
| 2222A | 1774. | 1.214 | 1.207 | 1.195 | 1.459 | 1.446 | 1.434 | 7.138 | 12.350 |
| 2222A | 1775. | 1.208 | 1.201 | 1.187 | 1.475 | 1.457 | 1.447 | 7.383 | 12.770 |
| 2222A | 1776. | 1.207 | 1.200 | 1.185 | 1.475 | 1.456 | 1.445 | 7.358 | 13.020 |
| 2222A | 1778. | 1.205 | 1.198 | 1.185 | 1.474 | 1.457 | 1.443 | 7.109 | 13.600 |
| 2222A | 1779. | 1.203 | 1.197 | 1.184 | 1.477 | 1.457 | 1.442 | 6.860 | 13.920 |
| 2222A | 1782. | 1.211 | 1.202 | 1.186 | 1.478 | 1.457 | 1.440 | 6.400 | 13.500 |
| 2222A | 1784. | 1.213 | 1.206 | 1.191 | 1.479 | 1.457 | 1.441 | 5.800 | 13.100 |
| 2222A | 1786. | 1.217 | 1.210 | 1.195 | 1.481 | 1.457 | 1.441 | 5.300 | 12.700 |
| 2222A | 1788. | 1.220 | 1.213 | 1.201 | 1.482 | 1.457 | 1.441 | 5.000 | 12.710 |
| 2222A | 1789. | 1.222 | 1.217 | 1.208 | 1.477 | 1.457 | 1.441 | 4.800 | 12.470 |
| 2222A | 1790. | 1.230 | 1.226 | 1.217 | 1.476 | 1.457 | 1.438 | 4.650 | 12.370 |
| 2222A | 1792. | 1.238 | 1.233 | 1.225 | 1.478 | 1.457 | 1.439 | 4.160 | 12.030 |
| 2222A | 1793. | 1.251 | 1.248 | 1.238 | 1.479 | 1.458 | 1.435 | 3.670 | 11.600 |
| 2222A | 1794. | 1.279 | 1.275 | 1.269 | 1.475 | 1.459 | 1.431 | 2.490 | 11.340 |
| 1 | 00656 | 1.50000 | 11.60000 | 1.16600 | 153.20000 | | | 1.470 | 1.100 |
| 2 | 22131 | 14.00000 | 9.28000 | 1.42800 | 140.00000 | | | | |

WQEC/C 77-134

ORIGINAL PAGE IS
OF POOR QUALITY

DATE OF RUN IS 07/19/76
 BACK DAY CURRENT

| | | |
|------|-------|------|
| 222A | 1753. | .230 |
| 222A | 1754. | .260 |
| 222A | 1755. | .250 |
| 222A | 1757. | .210 |
| 222A | 1758. | .210 |
| 222A | 1759. | .210 |
| 222A | 1761. | .200 |
| 222A | 1762. | .190 |
| 222A | 1764. | .170 |
| 222A | 1766. | .150 |
| 222A | 1767. | .170 |
| 222A | 1768. | .220 |
| 222A | 1769. | .260 |
| 222A | 1770. | .270 |
| 222A | 1771. | .270 |
| 222A | 1772. | .270 |
| 222A | 1774. | .260 |
| 222A | 1775. | .290 |
| 222A | 1776. | .310 |
| 222A | 1778. | .330 |
| 222A | 1779. | .360 |
| 222A | 1782. | .360 |
| 222A | 1784. | .350 |
| 222A | 1786. | .340 |
| 222A | 1788. | .340 |
| 222A | 1789. | .350 |
| 222A | 1790. | .360 |
| 222A | 1792. | .410 |
| 222A | 1793. | .460 |
| 222A | 1794. | .520 |

1

.00820

.55000

10.00000

.15000

57.00000

WQEC/C 77-134

3. Pack 223A, 5-cells

a. Cell information: (Same as pack 221A, Section V.E.1.)

b. Parameters:

| | | | |
|--------------------------|-------|----------------------|-----|
| Depth of Discharge (%) | 60 | Temperature (°C) | 0 |
| Charge Control | VL | Float Current (amps) | .20 |
| Charge Current (amps) | 1.20 | Auxiliary Electrode: | |
| Discharge Current (amps) | 6.00 | Resistance (ohms) | 20 |
| Voltage Limit (v/c) | 1.495 | | |

c. Capacity Checks: (Discharge to .50 volts any cell)

| | Cell
1 | Cell
2 | Cell
3 | Cell
4 | Cell
5 | ah
out |
|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Precycling (Figure 168) | .500 | .770 | .934 | .803 | .680 | 15.80 |
| Shadow 1 (Figure 169) | .918 | .869 | .911 | .793 | .466 | 16.25 |
| Shadow 2 (Figure 170) | .849 | .942 | .931 | .647 | .513 | 16.82 |
| Shadow 3 (Figure 171) | .880 | .827 | .886 | .528 | .489 | 16.69 |
| Shadow 4 | .437 | .769 | .800 | .388 | .353 | 17.08 |
| Shadow 5 (Figure 172) | .495 | .815 | .808 | .538 | .501 | 17.46 |
| Shadow 6 | .457 | .753 | .768 | .578 | .461 | 17.88 |
| Shadow 7 (Figure 173) | .570 | .858 | .909 | .666 | .624 | 17.13 |
| Shadow 8 (Figure 174) | .623 | .842 | .838 | .793 | .467 | 16.59 |
| Shadow 9 (Figure 175) | .629 | .874 | .842 | .832 | .485 | 16.97 |

d. Test results during Eclipse Seasons: (Figures 176 to 184)

(1) End of Discharge Voltages: Effect of the reconditioning of the pack, due to the capacity check, can be seen for each season.

(2) End of Charge Voltages: The cells have been unbalanced, at the end of charge, throughout each eclipse season.

(3) Ampere-Hour Input: Input was high at the beginning of periods 6 and 7; but was lower for period 8. This was due to the pack being placed on a trickle charge, instead of being voltage limited, during the sun period between shadow periods 7 and 8.

(4) Pressures at End of Charge: The pressures on cells 1 and 5 increased from 15 and 25 psia, during period 1, to a maximum of 55 and 85 psia during period 7. The pressures were less for periods 8 and 9 in which the maximum (cell 5) was 55 psia for period 8 and 30 psia for period 9. The lower pressures followed the pack being placed on a trickle charge during its' sun periods.

e. Performance during Sun Periods: The pack has completed 8 sun periods as it began test with an eclipse season. The pack floated at its voltage limit for the first 6 periods then was placed on a trickle charge of .2 amperes during the seventh period because of increased cell temperature. The pack is now placed on its voltage limit float with a maximum current of .2 amperes. Pressures had increased from a maximum of 25 psia to 75 psia during periods 1 to 6, then decreased to less than 15 psia during periods 7 through 9. Cell 5 exhibited the highest pressure throughout the sun periods. Following is a listing of the high, average and low cell voltages and current (amps) at the start and end of each sun period.

Sun Periods

| | 1 | | 2 | | 3 | | 4 | |
|------------------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|
| <u>Voltages*</u> | <u>Start</u> | <u>End</u> | <u>Start</u> | <u>End</u> | <u>Start</u> | <u>End</u> | <u>Start</u> | <u>End</u> |
| High | 1.519(1) | 1.517(4) | 1.530(1) | 1.515(4) | 1.510(1) | 1.518(4) | 1.512(3) | 1.558(5) |
| Average | 1.496 | 1.495 | 1.493 | 1.495 | 1.497 | 1.495 | 1.497 | 1.497 |
| Low | 1.450(2) | 1.476(2) | 1.476(2) | 1.484(2) | 1.481(2) | 1.482(2) | 1.478(1) | 1.428(1) |
| Current | .13 | .07 | .18 | .06 | .04 | .05 | .09 | .17 |
| | 5 | | 6 | | 7** | | 8 | |
| <u>Voltages</u> | <u>Start</u> | <u>End</u> | <u>Start</u> | <u>End</u> | <u>Start</u> | <u>End</u> | <u>Start</u> | <u>End</u> |
| High | 1.532(1) | 1.529(4) | 1.519(4) | 1.534(5) | 1.515(4) | 1.441(5) | 1.534(4) | 1.432(5) |
| Average | 1.495 | 1.494 | 1.495 | 1.496 | 1.493 | 1.434 | 1.494 | 1.425 |
| Low | 1.410(3) | 1.459(1) | 1.439(3) | 1.470(1) | 1.454(3) | 1.425(1) | 1.439(3) | 1.415(1) |
| Current | .08 | .70 | .17 | .70 | .23 | .20 | .15 | .20 |
| | 9 | | | | | | | |
| <u>Voltages</u> | <u>Start</u> | <u>End</u> | | | | | | |
| High | 1.525(4) | 1.447(3) | | | | | | |
| Average | 1.496 | 1.426 | | | | | | |
| Low | 1.443(3) | 1.417(1) | | | | | | |
| Current | .2 | .2 | | | | | | |

*--() indicates which cell

**--current reduced to .2 amperes during this period

KEY
 * HIGH CELL
 + Low Cell
 * Average Cell

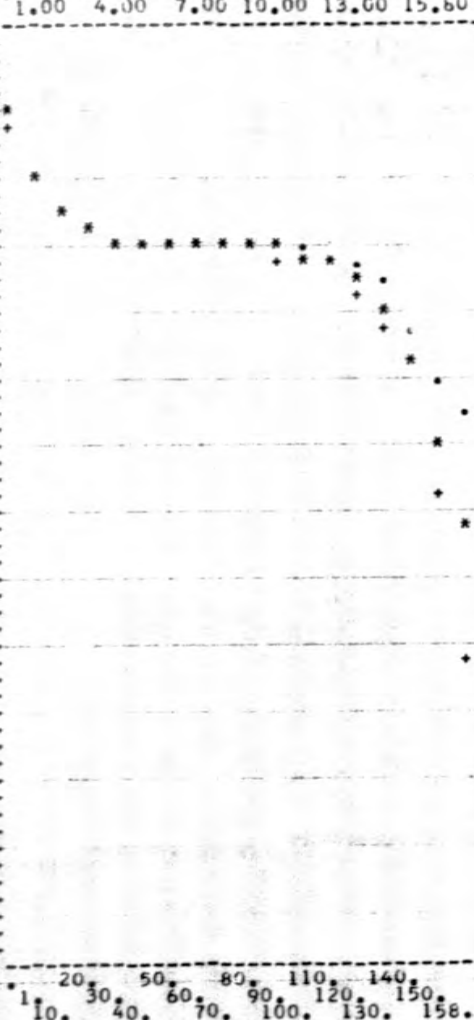
PACK NUMBER IS 223A
 PRE-CYCLING 6 DEGREES
 CYCLE NUMBER IS 7.
 DISCHARGE RATE IS 6.

AMPERE HOUR OUT

WQEC/C 77-134

0.00 2.00 5.00 8.00 11.00 14.00
 1.00 3.00 6.00 9.00 12.00 15.00
 1.00 4.00 7.00 10.00 13.00 15.60

C 1.60
 A 1.57
 P 1.54
 A 1.51
 C 1.48
 I 1.45
 T 1.42
 Y 1.39
 C 1.36
 I 1.33
 T 1.30
 Y 1.27
 C 1.24
 E 1.21
 L 1.18
 L 1.15
 V 1.12
 D 1.09
 L 1.06
 T 1.03
 A 1.00
 G 0.97
 E 0.94
 S 0.91
 C 0.88
 A 0.85
 L 0.82
 E 0.79
 S 0.76
 C 0.73
 A 0.70
 L 0.67
 E 0.64
 S 0.61
 C 0.58
 A 0.55
 L 0.52
 E 0.49
 S 0.46
 C 0.43
 A 0.40
 L 0.37
 E 0.34
 S 0.31
 C 0.28
 A 0.25
 L 0.22
 E 0.19
 S 0.16
 C 0.13
 A 0.10
 L 0.07
 E 0.04
 S 0.01
 C 0.02



TIME IN MINUTES
 CELLS INCLUDED V1 V2 V3 V4 V5

FIGURE 168

ORIGINAL PAGE IS
 OF POOR QUALITY

KEY
 * HIGH CELL
 + Low Cell
 * Average Cell

PACK NUMBER IS 223A
 SHADOW PERIOD IS 1
 CYCLE NUMBER IS 29
 DISCHARGE RATE IS 6.0

AMPERE HOUR OUT

WQEC/C 77-134

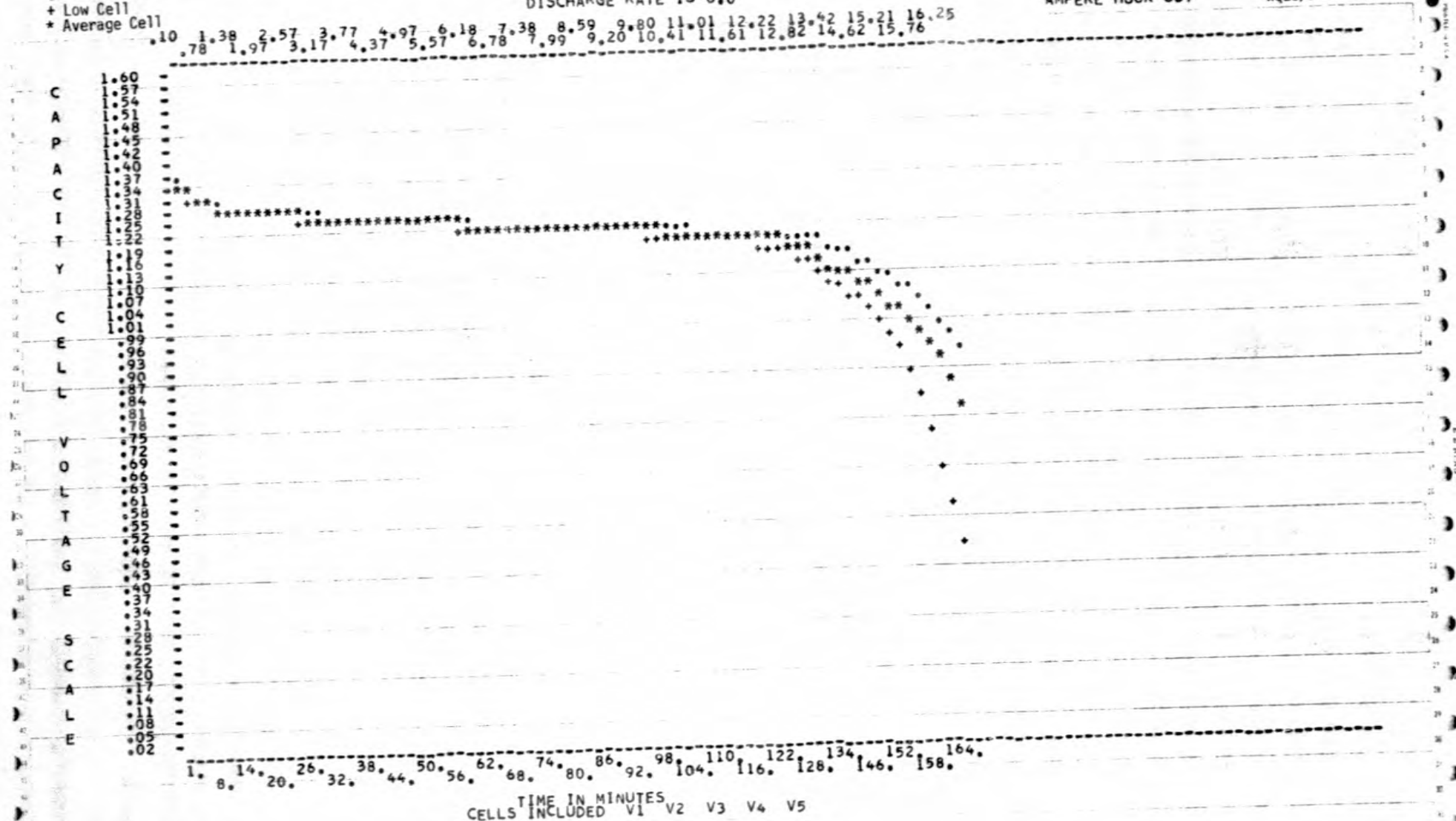


FIGURE 169

KEY
 • HIGH CELL
 + Low Cell
 * Average Cell

PACK NUMBER IS 223A
 SHADOW PERIOD IS 2
 CYCLE NUMBER IS 211
 DISCHARGE RATE IS 6.0

AMPERE HOUR OUT

WQEC/C 77-134

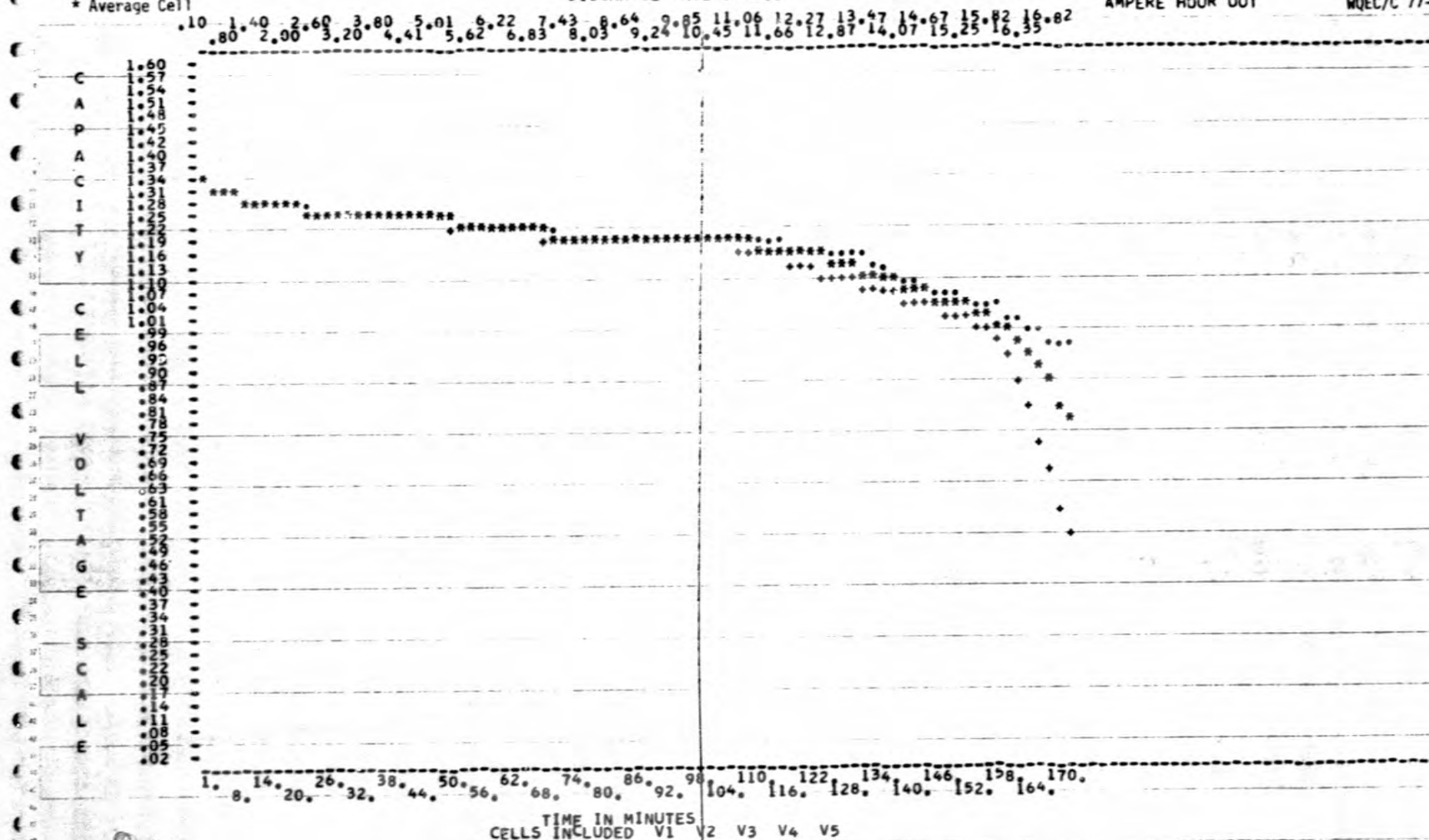


FIGURE 170

ORIGINAL PAGE IS
 OF POOR QUALITY

KEY
 • HIGH CELL
 + Low Cell
 * Average Cell

PACK NUMBER IS 223A
 SHADOW PERIOD IS 3
 CYCLE NUMBER IS 393.
 DISCHARGE RATE IS 6.

WQEC/C 77-134

AMPERE HOUR OUT

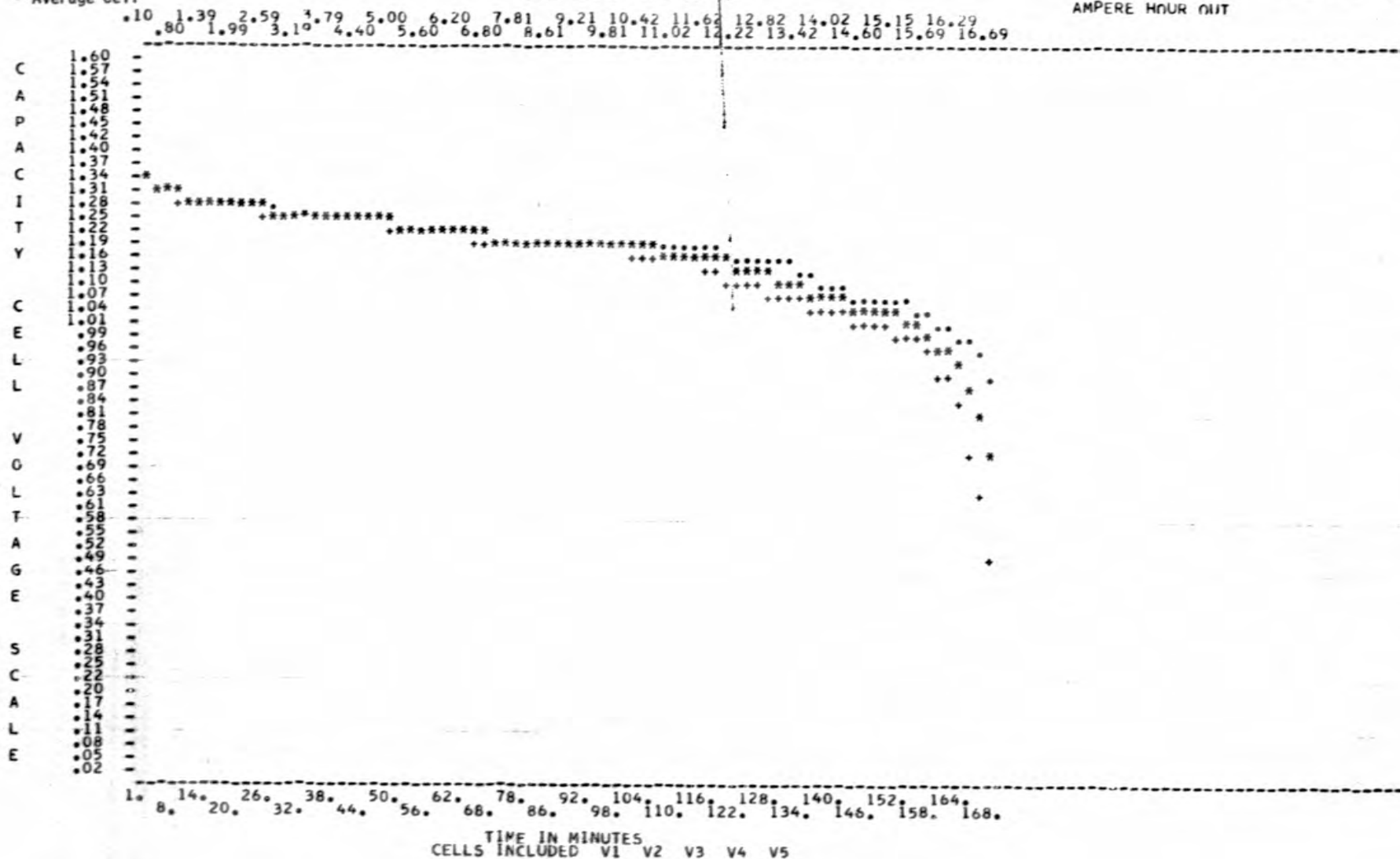


FIGURE 171



AL 1.4 CELL
+ Low Cell
* Average Cell

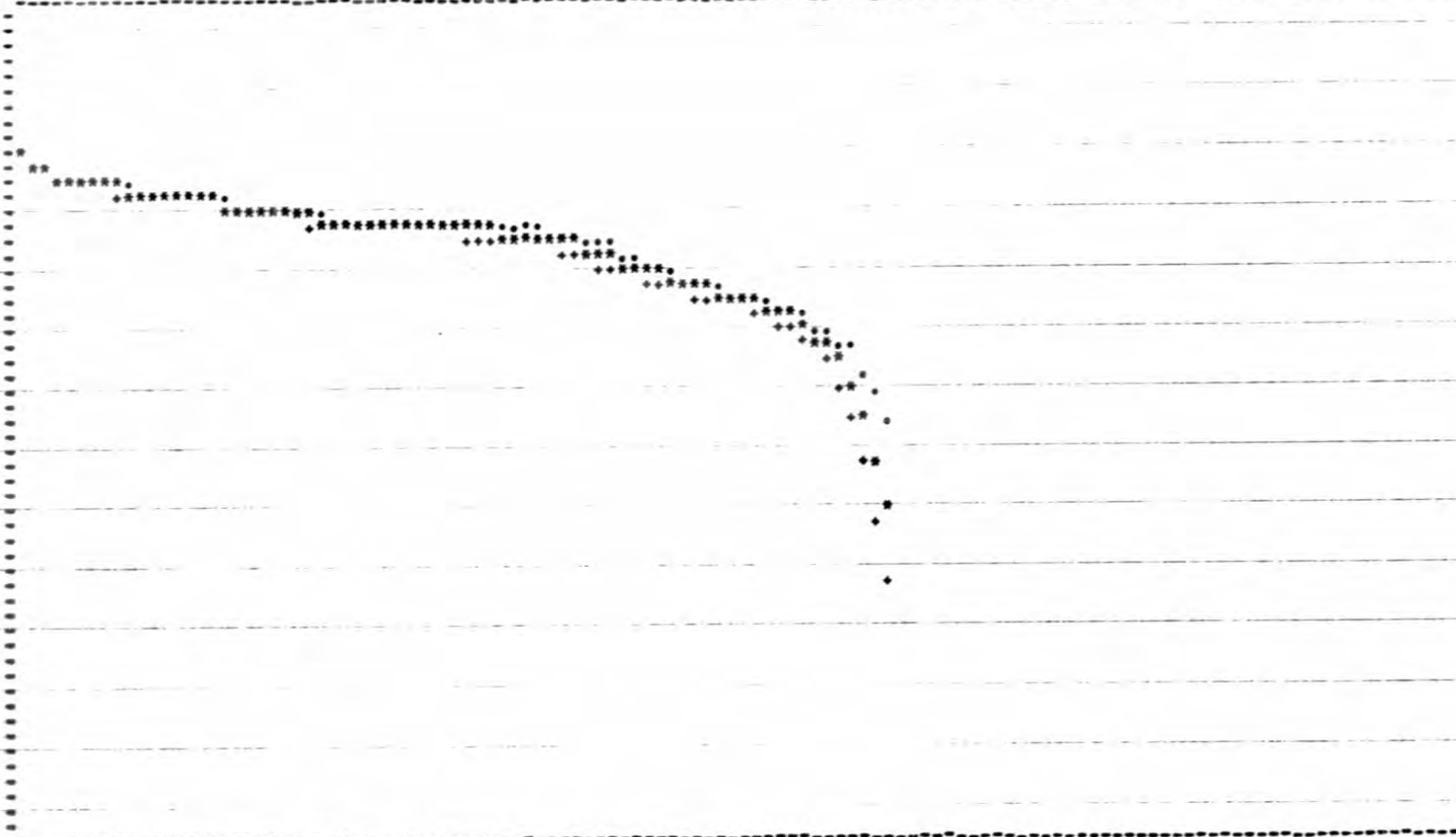
PACK NUMBER IS 223A
SHADOW PERIOD IS 5
CYCLE NUMBER IS 758.
DISCHARGE RATE IS 6.

AMPERE HOUR OUT

WQEC/C 77-134

24 1.69 3.15 4.54 5.99 7.45 8.90 10.35 11.80 13.26 14.71 16.14 17.46
.97 2.42 3.82 5.27 6.72 8.17 9.62 11.08 12.53 13.98 15.43 16.82

C 1.60
A 1.57
P 1.54
A 1.51
C 1.48
I 1.45
T 1.42
Y 1.40
C 1.37
E 1.34
L 1.31
L 1.28
V 1.25
O 1.22
L 1.19
T 1.16
A 1.13
G 1.10
E 1.07
S 1.04
C 1.01
A 1.00
L 1.00
E 1.00



1. 9. 16. 23. 30. 38. 45. 53. 60. 67. 74. 82. 89. 96. 103. 111. 118. 125. 133. 140. 147. 154. 161. 168. 175.

TIME IN MINUTES
CELLS INCLUDED V1 V2 V3 V4 V5

ORIGINAL PAGE IS
OF POOR QUALITY

FIGURE 172

KEY
 • HIGH CELL
 + Low Cell
 * Average Cell

PACK NUMBER IS 223A
 SHADOW PERIOD IS 7
 CYCLE NUMBER IS 1312.
 DISCHARGE RATE IS 6.

WQEC/C 77-134

AMPERE HOUR OUT

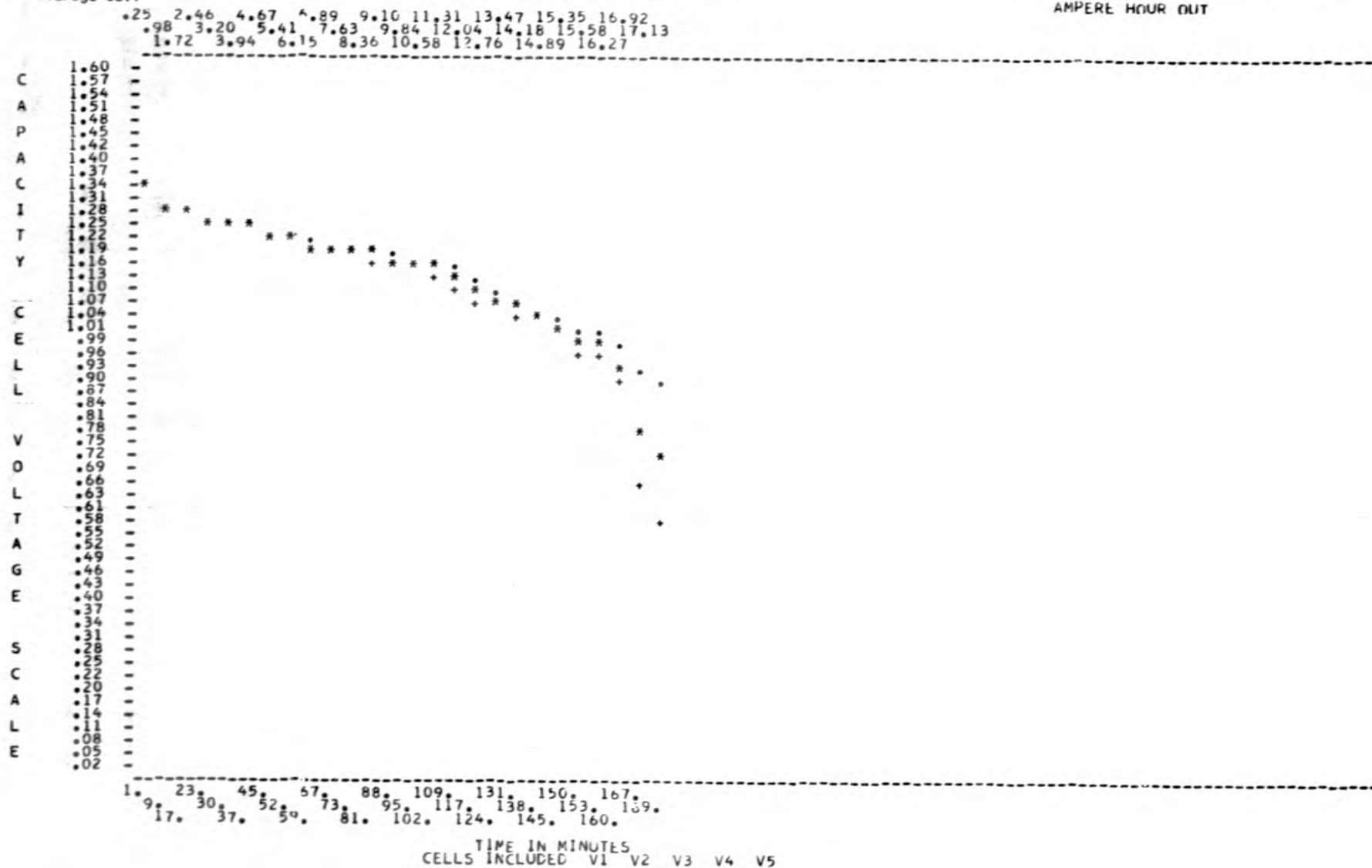


FIGURE 173

AMPERE HOUR OUT

* Average Cell

CAPACITY CELL VOLTAGE SCALE

[illegible]

$\begin{matrix} .24 & 1.93 & 4.11 & 7.29 & 9.19 & 11.37 & 13.52 & 15.40 & 16.32 \\ .48 & 2.66 & 4.84 & 7.74 & 9.92 & 12.10 & 14.23 & 15.63 & 15.95 \\ 1.21 & 3.38 & 5.56 & 8.47 & 10.65 & 12.81 & 14.93 & 16.09 & 16.59 \end{matrix}$

02 -

Of 11. 18. 25. 33. 40. 47. 54. 61. 80. 88. 95. 102. 109. 116. 124. 131. 138. 145. 152. 157. 160. 167. 174. 181.

| TIME IN MINUTES | V1 | V2 | V3 | V4 | V5 |
|-----------------|----|----|----|----|----|
| CELLS INCLUDED | | | | | |

FIGURE 174

ORIGINAL PAGE IS
OF POOR QUALITY

KEY
 • HIGH CELL
 + Low Cell
 * Average Cell

PACK NUMBER IS 223A
 SHADOW PERIOD IS 9
 CYCLE NUMBER IS 1773.
 DISCHARGE RATE IS 6.

WQEC/C 77-134

AMPERE HOUR OUT

24 3.15 6.07 8.99 11.90 14.73 16.97
 1.21 4.13 7.04 9.96 12.85 15.65
 2.18 5.10 8.01 10.93 13.80 16.54

C
A
P
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C
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C
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V
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L
T
A
G
E

S
C
A
L
E

1.60
1.57
1.54
1.51
1.48
1.45
1.42
1.40
1.37
1.34
1.31
1.28
1.25
1.22
1.19
1.16
1.13
1.10
1.07
1.04
1.01
0.99
0.96
0.93
0.90
0.87
0.84
0.81
0.78
0.75
0.72
0.69
0.66
0.63
0.61
0.58
0.55
0.52
0.49
0.46
0.43
0.40
0.37
0.34
0.31
0.28
0.25
0.22
0.20
0.17
0.14
0.11
0.08
0.05
0.02

1. 28. 38. 57. 67. 86. 115. 144. 168.
 9. 19. 38. 48. 67. 74. 96. 105. 124. 134. 153. 163.

TIME IN MINUTES
 CELLS INCLUDED V1 V2 V3 V4 V5

FIGURE 175

QREC/C 77-134

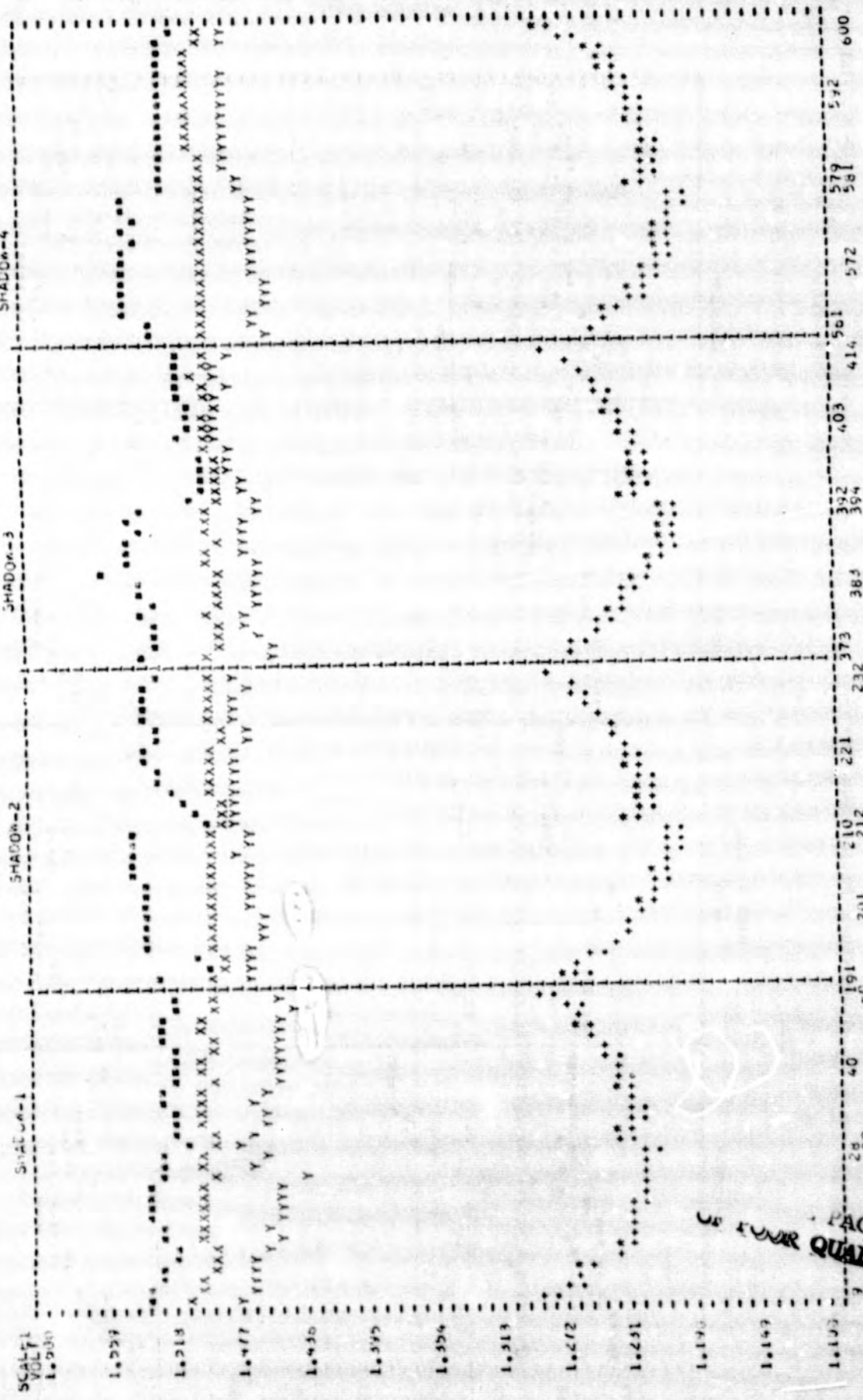
DEPTH DISCHARGE 60
TEMPERATURE 00
AMPERE RATE 12
EAGLE PITCHER CELLS

SERIAL 003 020 016 024 021

SYNCHRONOUS ORBIT SHADOW PLOT

DISCHARGE VOLTAGE
DISCHARGE VOLTAGE
DISCHARGE VOLTAGE
DISCHARGE VOLTAGE
DISCHARGE VOLTAGE
DISCHARGE VOLTAGE

PACK = 221A



OF FOUR QUANTUM

KEY
 * HIGH END DISCHARGE VOLTAGE
 + AVE END DISCHARGE VOLTAGE
 - LOW END DISCHARGE VOLTAGE
 X HIGH EOC
 Y AVE EOC
 Y LOW EOC

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60
 TEMPERATURE 00
 AMPERE RATE 12
 EAGLE PITCHER CELLS

WQEC/C 77-134

SERIAL 003 020 016 024 021

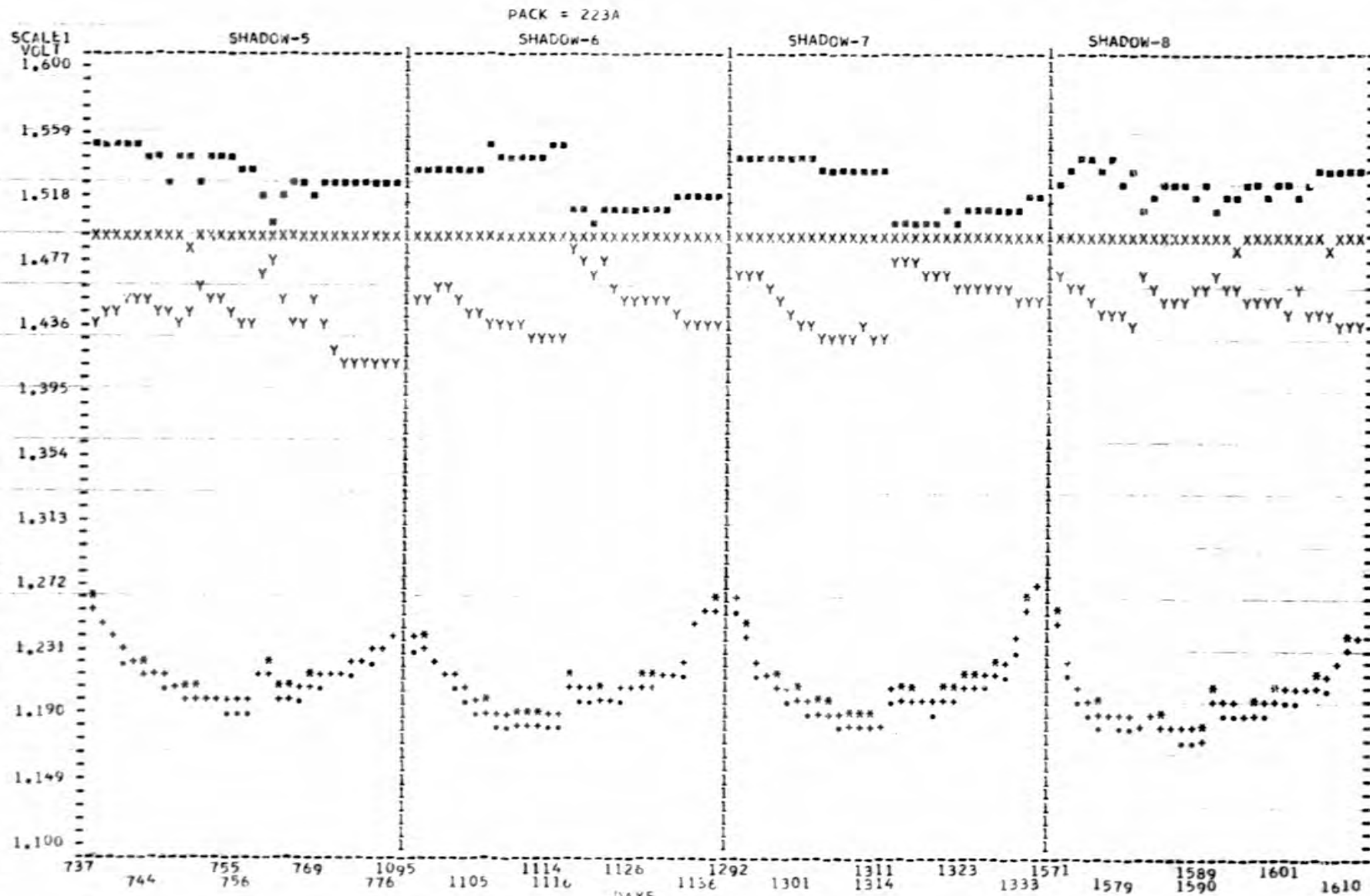


FIGURE 177

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60
TEMPERATURE 00
AMPERE RATE 12
EAGLE PITCHER CELLS

MOEC/C 77-134

SERIAL 003 020 016 024 021

KEY
* HIGH
+ AVE
- LOW
X HIGH
Y AVE
Y LOW

END DISCHARGE VOLTAGE
END DISCHARGE VOLTAGE
END DISCHARGE VOLTAGE
END DISCHARGE VOLTAGE
END DISCHARGE VOLTAGE
END DISCHARGE VOLTAGE

PACK = 223A

SCALE 1
VOLT
1.550

SHADOW-9

SHADOW-

SHADOW-

SHADOW-

1.513

1.476

1.439

1.402

1.366

1.329

1.292

1.255

1.218

1.181

1.144

1.100

1762

1772
1774

1783

1794

DAYS

FIGURE 178

413

ORIGINAL PAGE IS
OF POOR QUALITY

WQEC/C 77-134

DEPTH DISCHARGE 60
TEMPERATURE 60
AMPERE RATE 12
EAGLE PITCHER CELLS
SERIAL 003 020 016 024 021

SYNCHRONOUS ORBIT SHADOW PLOT

KEY
* AMI
+ AMI-TOTAL

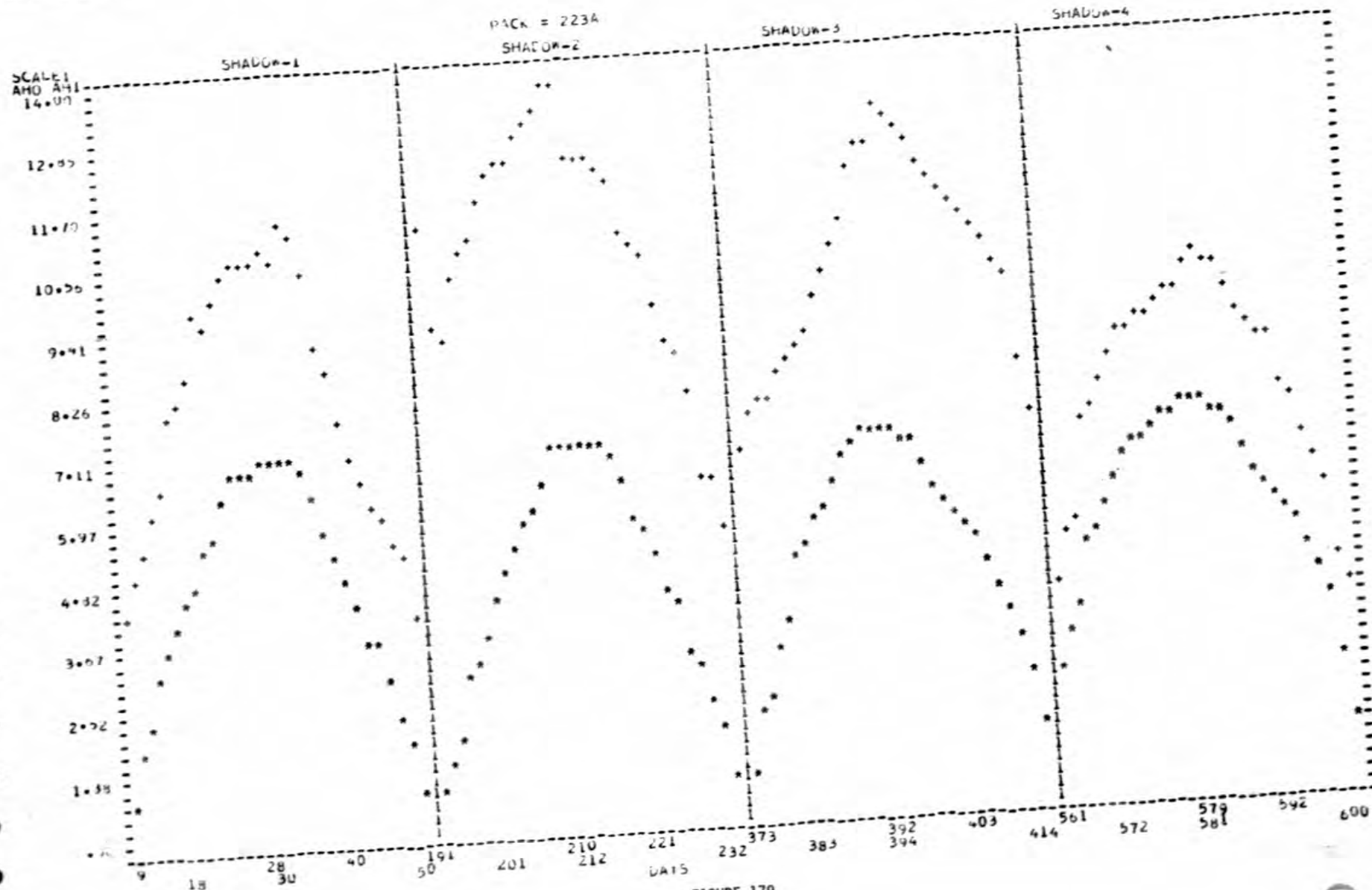


FIGURE 179

KEY
 * AHU
 + AHU-TOTAL

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60
 TEMPERATURE 00
 AMPERE RATE 12
 EAGLE PITCHER CELLS
 SERIAL 003 020 016 024 021

WQEC/C 77-134

PACK = 223A

SCALE 1
 AHU AHU
 16.00

SHADOW-5

SHADOW-6

SHADOW-7

SHADOW-8

14.73

13.46

12.19

10.92

9.65

8.38

7.11

5.84

4.57

3.30

2.02

.50

737 744 755 756 769 776 1095 1105 1114 1116 1126 1136 1292 1301 1311 1314 1323 1333 1571 1579 1589 1590 1601 1640

DAYS

FIGURE 180

KEY
 * AHO
 + AHI-TOTAL

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60
 TEMPERATURE 00
 AMPERE RATE 12
 TAGLE PITCHER CELLS
 SERIAL 003 020 016 024 021

WQEC/C 77-134

PACK = 223A

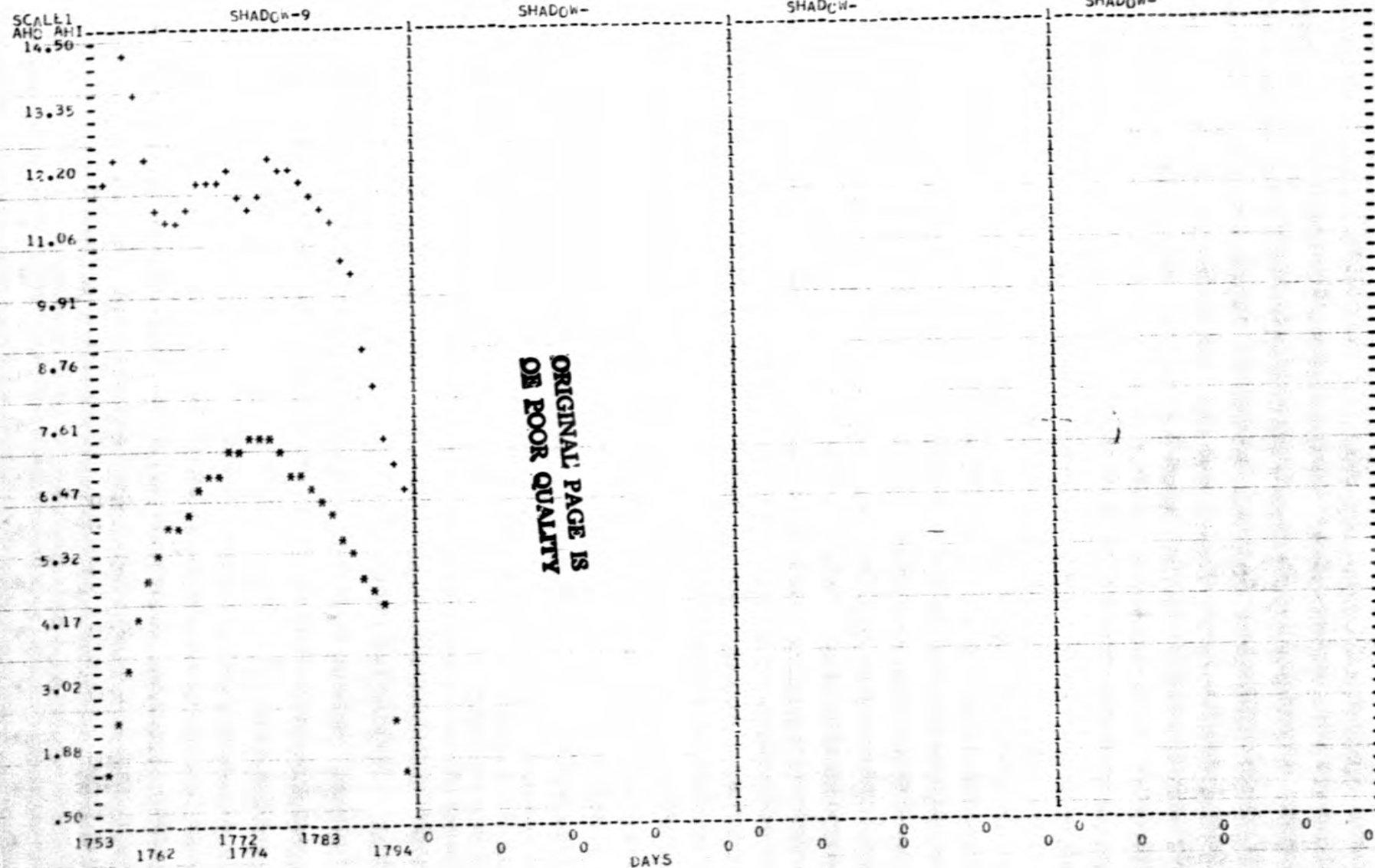


FIGURE 181

DEPTH DISCHARGE 60
 TEMPERATURE 00
 AMBIENT RATE 00
 SERIAL 003 028 016 024 021

EAGLE PITCHER CELLS

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 223A

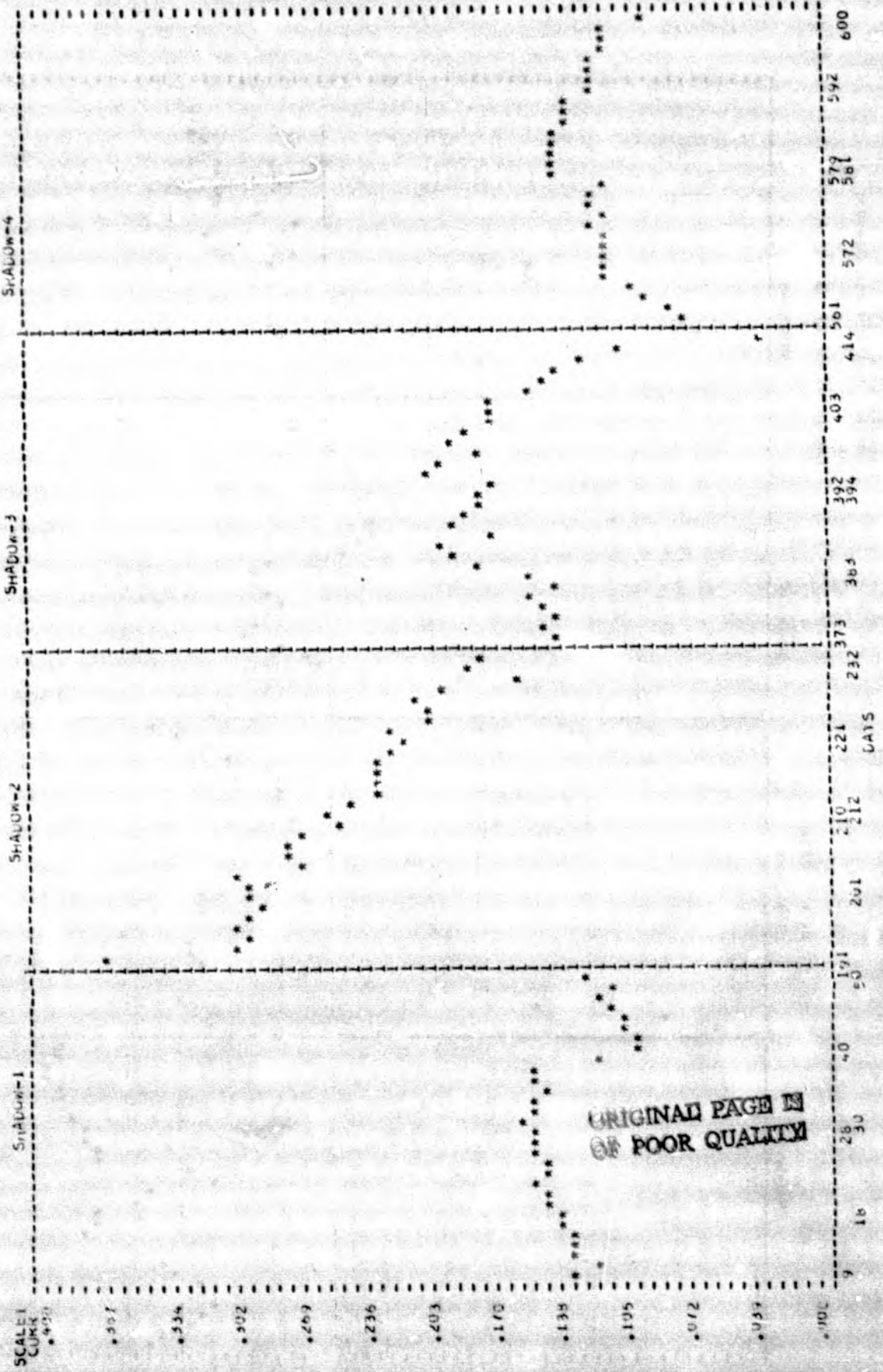


FIGURE 182

KEY
* END CHARGE CURRENT

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60
TEMPERATURE 00
AMPERE RATE 12
SERIAL 003 020 016 024 021

WQEC/C 77-134

EAGLE PITCHER CELLS

PACK = 223A

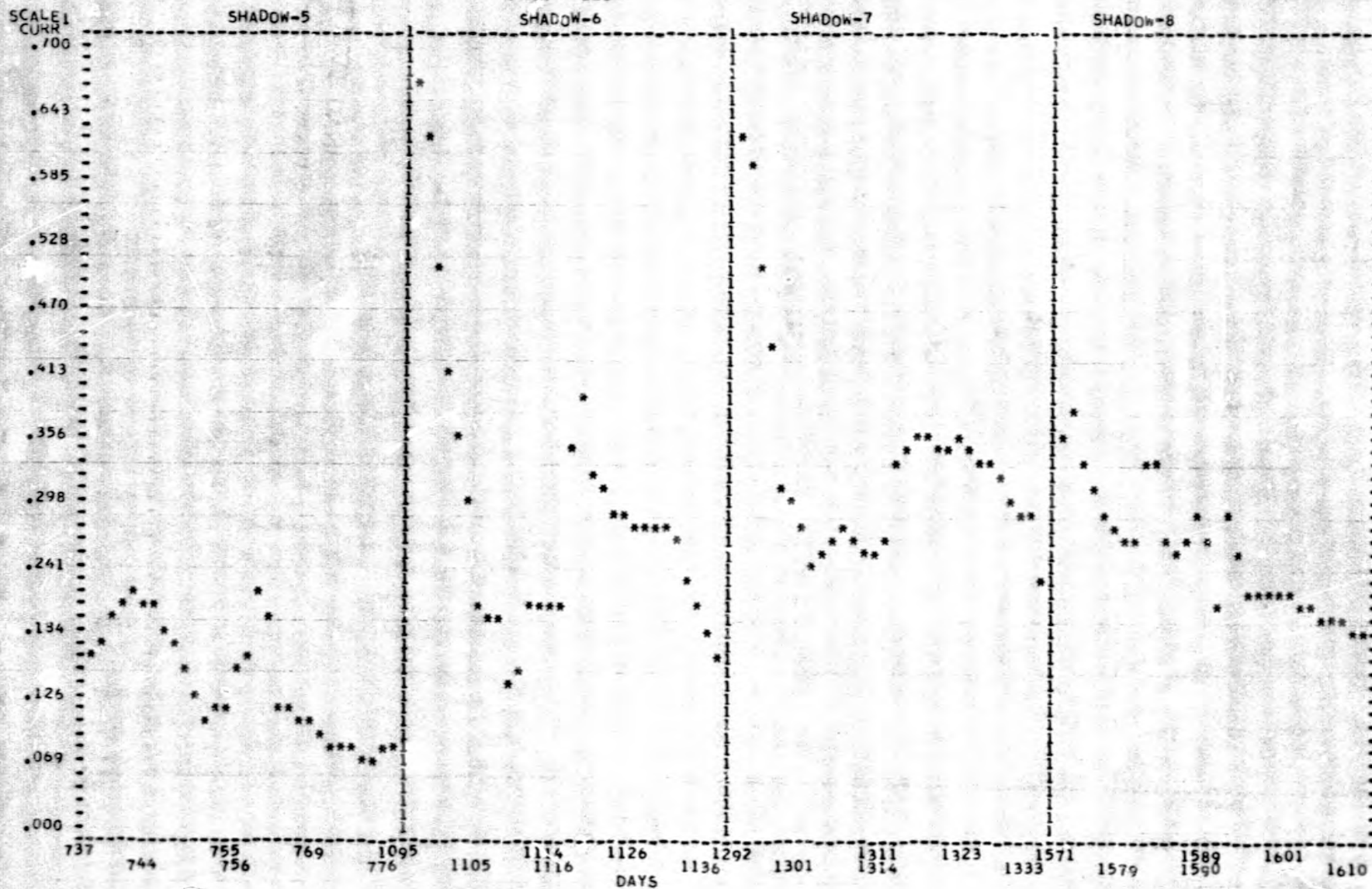


FIGURE 183

CHARGE CURRENT

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 60
TEMPERATURE 00
AMPERE RATE 12
SERIAL 003 020 016 024 021

WQEC/C 77-134

EAGLE PITCHER CELLS

PACK = 223A

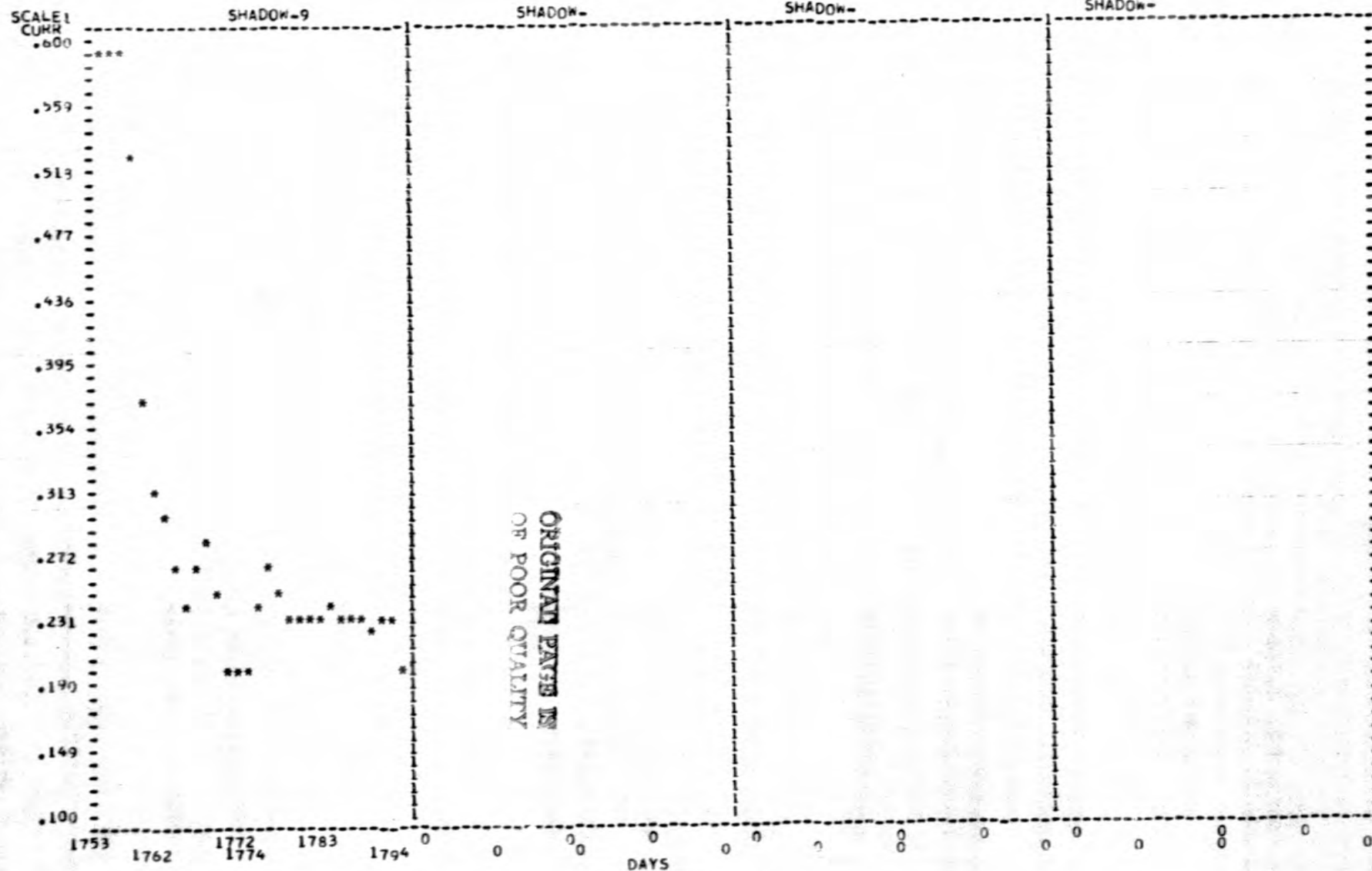


FIGURE 184

DATE OF RUN IS 09/20/76

PACK NUMBER IS 223A

SHADOW PERIOD IS 1

CYCLE IS

29.

WOEC/C 77-134
PAGE IS 12.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 0000 | 0.00 | V | V | V | V | V | V | V | V | 1.98 | 2.04 | 1.91 |
| 0005 | 0.00 | V | V | V | V | V | V | V | V | 1.96 | 2.01 | 1.88 |
| 0010 | 0.00 | V | V | V | V | V | V | V | V | 1.94 | 2.01 | 1.86 |
| 0015 | 0.00 | V | V | V | V | V | V | V | V | 1.91 | 2.01 | 1.81 |
| 0020 | 0.00 | V | V | V | V | V | V | V | V | 1.89 | 2.01 | 1.78 |
| 0025 | 0.00 | V | V | V | V | V | V | V | V | 1.86 | 2.01 | 1.72 |
| 0030 | 0.00 | V | V | V | V | V | V | V | V | 1.83 | 2.01 | 1.66 |
| 0035 | 0.00 | V | V | V | V | V | V | V | V | 1.78 | 2.01 | 1.57 |
| 0040 | 0.00 | V | V | V | V | V | V | V | V | 1.73 | 2.01 | 1.48 |
| 0045 | 0.00 | V | V | V | V | V | V | V | V | 1.69 | 2.01 | 1.39 |
| 0050 | 0.00 | V | V | V | V | V | V | V | V | 1.63 | 2.01 | 1.30 |
| 0055 | 0.00 | V | V | V | V | V | V | V | V | 1.58 | 2.01 | 1.21 |
| 0100 | 0.00 | V | V | V | V | V | V | V | V | 1.53 | 2.01 | 1.12 |
| 0105 | 0.00 | V | V | V | V | V | V | V | V | 1.48 | 2.01 | 1.03 |
| 0110 | 0.00 | V | V | V | V | V | V | V | V | 1.43 | 2.01 | 0.94 |
| 0115 | 0.00 | V | V | V | V | V | V | V | V | 1.38 | 2.01 | 0.85 |
| 0120 | 0.00 | V | V | V | V | V | V | V | V | 1.33 | 2.01 | 0.76 |
| 0125 | 0.00 | V | V | V | V | V | V | V | V | 1.28 | 2.01 | 0.67 |
| 0130 | 0.00 | V | V | V | V | V | V | V | V | 1.23 | 2.01 | 0.58 |
| 0135 | 0.00 | V | V | V | V | V | V | V | V | 1.18 | 2.01 | 0.49 |
| 0140 | 0.00 | V | V | V | V | V | V | V | V | 1.13 | 2.01 | 0.40 |
| 0145 | 0.00 | V | V | V | V | V | V | V | V | 1.08 | 2.01 | 0.31 |
| 0150 | 0.00 | V | V | V | V | V | V | V | V | 1.03 | 2.01 | 0.22 |
| 0155 | 0.00 | V | V | V | V | V | V | V | V | 0.98 | 2.01 | 0.13 |
| 0200 | 0.00 | V | V | V | V | V | V | V | V | 0.93 | 2.01 | 0.04 |
| 0205 | 0.00 | V | V | V | V | V | V | V | V | 0.88 | 2.01 | -0.05 |
| 0210 | 0.00 | V | V | V | V | V | V | V | V | 0.83 | 2.01 | -0.14 |
| 0215 | 0.00 | V | V | V | V | V | V | V | V | 0.78 | 2.01 | -0.23 |
| 0220 | 0.00 | V | V | V | V | V | V | V | V | 0.73 | 2.01 | -0.32 |
| 0225 | 0.00 | V | V | V | V | V | V | V | V | 0.68 | 2.01 | -0.41 |
| 0230 | 0.00 | V | V | V | V | V | V | V | V | 0.63 | 2.01 | -0.50 |
| 0235 | 0.00 | V | V | V | V | V | V | V | V | 0.58 | 2.01 | -0.59 |
| 0240 | 0.00 | V | V | V | V | V | V | V | V | 0.53 | 2.01 | -0.68 |
| 0245 | 0.00 | V | V | V | V | V | V | V | V | 0.48 | 2.01 | -0.77 |
| 0250 | 0.00 | V | V | V | V | V | V | V | V | 0.43 | 2.01 | -0.86 |
| 0255 | 0.00 | V | V | V | V | V | V | V | V | 0.38 | 2.01 | -0.95 |
| 0300 | 0.00 | V | V | V | V | V | V | V | V | 0.33 | 2.01 | -1.04 |
| 0305 | 0.00 | V | V | V | V | V | V | V | V | 0.28 | 2.01 | -1.13 |
| 0310 | 0.00 | V | V | V | V | V | V | V | V | 0.23 | 2.01 | -1.22 |
| 0315 | 0.00 | V | V | V | V | V | V | V | V | 0.18 | 2.01 | -1.31 |
| 0320 | 0.00 | V | V | V | V | V | V | V | V | 0.13 | 2.01 | -1.40 |
| 0325 | 0.00 | V | V | V | V | V | V | V | V | 0.08 | 2.01 | -1.49 |
| 0330 | 0.00 | V | V | V | V | V | V | V | V | 0.03 | 2.01 | -1.58 |
| 0335 | 0.00 | V | V | V | V | V | V | V | V | -0.02 | 2.01 | -1.67 |
| 0340 | 0.00 | V | V | V | V | V | V | V | V | -0.07 | 2.01 | -1.76 |
| 0345 | 0.00 | V | V | V | V | V | V | V | V | -0.12 | 2.01 | -1.85 |
| 0350 | 0.00 | V | V | V | V | V | V | V | V | -0.17 | 2.01 | -1.94 |
| 0355 | 0.00 | V | V | V | V | V | V | V | V | -0.22 | 2.01 | -2.03 |
| 0400 | 0.00 | V | V | V | V | V | V | V | V | -0.27 | 2.01 | -2.12 |
| 0405 | 0.00 | V | V | V | V | V | V | V | V | -0.32 | 2.01 | -2.21 |
| 0410 | 0.00 | V | V | V | V | V | V | V | V | -0.37 | 2.01 | -2.30 |
| 0415 | 0.00 | V | V | V | V | V | V | V | V | -0.42 | 2.01 | -2.39 |
| 0420 | 0.00 | V | V | V | V | V | V | V | V | -0.47 | 2.01 | -2.48 |
| 0425 | 0.00 | V | V | V | V | V | V | V | V | -0.52 | 2.01 | -2.57 |
| 0430 | 0.00 | V | V | V | V | V | V | V | V | -0.57 | 2.01 | -2.66 |
| 0435 | 0.00 | V | V | V | V | V | V | V | V | -0.62 | 2.01 | -2.75 |
| 0440 | 0.00 | V | V | V | V | V | V | V | V | -0.67 | 2.01 | -2.84 |
| 0445 | 0.00 | V | V | V | V | V | V | V | V | -0.72 | 2.01 | -2.93 |
| 0450 | 0.00 | V | V | V | V | V | V | V | V | -0.77 | 2.01 | -3.02 |
| 0455 | 0.00 | V | V | V | V | V | V | V | V | -0.82 | 2.01 | -3.11 |
| 0500 | 0.00 | V | V | V | V | V | V | V | V | -0.87 | 2.01 | -3.20 |
| 0505 | 0.00 | V | V | V | V | V | V | V | V | -0.92 | 2.01 | -3.29 |
| 0510 | 0.00 | V | V | V | V | V | V | V | V | -0.97 | 2.01 | -3.38 |
| 0515 | 0.00 | V | V | V | V | V | V | V | V | -1.02 | 2.01 | -3.47 |
| 0520 | 0.00 | V | V | V | V | V | V | V | V | -1.07 | 2.01 | -3.56 |
| 0525 | 0.00 | V | V | V | V | V | V | V | V | -1.12 | 2.01 | -3.65 |
| 0530 | 0.00 | V | V | V | V | V | V | V | V | -1.17 | 2.01 | -3.74 |
| 0535 | 0.00 | V | V | V | V | V | V | V | V | -1.22 | 2.01 | -3.83 |
| 0540 | 0.00 | V | V | V | V | V | V | V | V | -1.27 | 2.01 | -3.92 |
| 0545 | 0.00 | V | V | V | V | V | V | V | V | -1.32 | 2.01 | -4.01 |
| 0550 | 0.00 | V | V | V | V | V | V | V | V | -1.37 | 2.01 | -4.10 |
| 0555 | 0.00 | V | V | V | V | V | V | V | V | -1.42 | 2.01 | -4.19 |
| 0600 | 0.00 | V | V | V | V | V | V | V | V | -1.47 | 2.01 | -4.28 |
| 0605 | 0.00 | V | V | V | V | V | V | V | V | -1.52 | 2.01 | -4.37 |
| 0610 | 0.00 | V | V | V | V | V | V | V | V | -1.57 | 2.01 | -4.46 |
| 0615 | 0.00 | V | V | V | V | V | V | V | V | -1.62 | 2.01 | -4.55 |
| 0620 | 0.00 | V | V | V | V | V | V | V | V | -1.67 | 2.01 | -4.64 |
| 0625 | 0.00 | V | V | V | V | V | V | V | V | -1.72 | 2.01 | -4.73 |
| 0630 | 0.00 | V | V | V | V | V | V | V | V | -1.77 | 2.01 | -4.82 |
| 0635 | 0.00 | V | V | V | V | V | V | V | V | -1.82 | 2.01 | -4.91 |
| 0640 | 0.00 | V | V | V | V | V | V | V | V | -1.87 | 2.01 | -5.00 |
| 0645 | 0.00 | V | V | V | V | V | V | V | V | -1.92 | 2.01 | -5.09 |
| 0650 | 0.00 | V | V | V | V | V | V | V | V | -1.97 | 2.01 | -5.18 |
| 0655 | 0.00 | V | V | V | V | V | V | V | V | -2.02 | 2.01 | -5.27 |
| 0700 | 0.00 | V | V | V | V | V | V | V | V | -2.07 | 2.01 | -5.36 |
| 0705 | 0.00 | V | V | V | V | V | V | V | V | -2.12 | 2.01 | -5.45 |
| 0710 | 0.00 | V | V | V | V | V | V | V | V | -2.17 | 2.01 | -5.54 |
| 0715 | 0.00 | V | V | V | V | V | V | V | V | -2.22 | 2.01 | -5.63 |
| 0720 | 0.00 | V | V | V | V | V | V | V | V | -2.27 | 2.01 | -5.72 |
| 0725 | 0.00 | V | V | V | V | V | V | V | V | -2.32 | 2.01 | -5.81 |
| 0730 | 0.00 | V | V | V | V | V | V | V | V | -2.37 | 2.01 | -5.90 |
| 0735 | 0.00 | V | V | V | V | V | V | V | V | -2.42 | 2.01 | -5.99 |
| 0740 | 0.00 | V | V | V | V | V | V | V | V | -2.47 | 2.01 | -6.08 |
| 0745 | 0.00 | V | V | V | V | V | V | V | V | -2.52 | 2.01 | -6.17 |
| 0750 | 0.00 | V | V | V | V | V | V | V | V | -2.57 | 2.01 | -6.26 |
| 0755 | 0.00 | V | V | V | V | V | V | V | V | -2.62 | 2.01 | -6.35 |
| 0800 | 0.00 | V | V | V | V | V | V | V | V | -2.67 | 2.01 | -6.44 |
| 0805 | 0.00 | V | V | V | V | V | V | V | V | -2.72 | 2.01 | -6.53 |
| 0810 | 0.00 | V | V | V | V | V | V | V | V | -2.77 | 2.01 | -6.62 |
| 0815 | 0.00 | V | V | V | V | V | V | V | V | -2.82 | 2.01 | -6.71 |
| 0820 | 0.00 | V | V | V | V | V | V | V | V | -2.87 | 2.01 | -6.80 |
| 0825 | 0.00 | V | V | V | V | V | V | V | V | -2.92 | 2.01 | -6.89 |
| 0830 | 0.00 | V | V | V | V | V | V | V | V | -2.97 | 2.01 | -6.98 |
| 0835 | 0.00 | V | V | V | V | V | V | V | V | -3.02 | 2.01 | -7.07 |
| 0840 | 0.00 | V | V | V | V | V | V | V | V | -3.07 | 2.01 | -7.16 |
| 0845 | 0.00 | V | V | V | V | V | V | V | V | -3.12 | 2.01 | -7.25 |
| 0850 | 0.00 | V | V | V | V | V | V | V | V | -3.17 | 2.01 | -7.34 |
| 0855 | 0.00 | V | V | V | V | V | V | V | V | -3.22 | 2.01 | -7.43 |
| 0900 | 0.00 | V | V | V | V | V | V | V | V | -3.27 | 2.01 | -7.52 |
| 0905 | 0.00 | V | V | V | V | V | V | V | V | -3.32 | 2.01 | -7.61 |
| 0910 | 0.00 | V | V | V | V | V | V | V | V | -3.37 | 2.01 | -7.70 |
| 0915 | 0.00 | V | V | V | V | V | V | V | V | -3.42 | 2.01 | -7.79 |
| 0920 | 0.00 | V | V | V | V | V | V | V | V | -3.47 | 2.01 | -7.88 |
| 0925 | 0.00 | V | V | V | V | V | V | V | V | -3.52 | 2.01 | -7.97 |
| 0930 | 0.00 | V | V | V | V | V | V | V | V | -3.57 | 2.01 | -8.06 |
| 0935 | 0.00 | V | V | V | V | V | V | V | V | -3.62 | 2.01 | -8.15 |
| 0940 | 0.00 | V | V | V | V | V | V | V | V | -3.67 | 2.01 | -8.24 |
| 0945 | 0.00 | V | V | V | V | V | V | V | V | -3.72 | 2.01 | -8.33 |
| 0950 | 0.00 | V | V | V | V | V | V | V | V | -3.77 | 2.01 | -8.42 |
| 0955 | 0.00 | V | V | V | V | V | V | V | V | -3.82 | 2.01 | -8.51 |
| 1000 | 0.00 | V | V | V | V | V | V | V | V | -3.87 | 2.01 | -8.60 |
| 1005 | 0.00 | V | V | V | V | V | V | V | V | -3.92 | 2.01 | -8.69 |
| 1010 | 0.00 | V | V | V | V | V | V | V | V | -3.97 | 2.01 | -8.78 |
| 1015 | 0.00 | V | V | V | V | V | V | V | V | -4.02 | 2.01 | -8.87 |
| 1020 | 0.00 | V | V | V | V | V | V | V | V | -4.07 | 2.01 | -8.96 |
| 1025 | 0.00 | V | V | V | V | V | V | V | V | -4.12 | 2.01 | -9.05 |
| 1030 | 0.00 | V | V | V | V | V | V | V | V | -4.17 | 2.01 | -9.14 |
| 1035 | 0.00 | V | V | V | V | V | V | V | V | -4.22 | 2.01 | -9.23 |
| 1040 | 0.00 | V | V | V | V | V | V | V | V | -4.27 | 2.01 | -9.32 |
| 1045 | 0.00 | V | V | V | V | V | V | V | V | -4.32 | 2.01 | -9.41 |
| 1050 | 0.00 | V | V | V | V | V | V | V | V | -4.37 | 2.01 | -9.50 |
| 1055 | 0.00 | V | V | V | V | V | V | V | V | -4.42 | 2.01 | -9.59 |
| 1100 | 0.00 | V | V | V | V | V | V | V | V | -4.47 | 2.01 | -9.68 |
| 1105 | 0.00 | V | V | V | V | V | V | V | V | -4.52 | 2.01 | -9.77 |
| 1110 | 0.00 | V | V | V | V | V | V | V | V | -4.57 | 2.01 | -9.86 |
| 1115 | 0.00</ | | | | | | | | | | | |

| TIME | APPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 1 | 100 | | | | | | | | | | 345 | | 343 |
| 2 | 100 | | | | | | | | | | 345 | | 343 |
| 3 | 100 | | | | | | | | | | 345 | | 343 |
| 4 | 100 | | | | | | | | | | 345 | | 343 |
| 5 | 100 | | | | | | | | | | 345 | | 343 |
| 6 | 100 | | | | | | | | | | 345 | | 343 |
| 7 | 100 | | | | | | | | | | 345 | | 343 |
| 8 | 100 | | | | | | | | | | 345 | | 343 |
| 9 | 100 | | | | | | | | | | 345 | | 343 |
| 10 | 100 | | | | | | | | | | 345 | | 343 |
| 11 | 100 | | | | | | | | | | 345 | | 343 |
| 12 | 100 | | | | | | | | | | 345 | | 343 |
| 13 | 100 | | | | | | | | | | 345 | | 343 |
| 14 | 100 | | | | | | | | | | 345 | | 343 |
| 15 | 100 | | | | | | | | | | 345 | | 343 |
| 16 | 100 | | | | | | | | | | 345 | | 343 |
| 17 | 100 | | | | | | | | | | 345 | | 343 |
| 18 | 100 | | | | | | | | | | 345 | | 343 |
| 19 | 100 | | | | | | | | | | 345 | | 343 |
| 20 | 100 | | | | | | | | | | 345 | | 343 |
| 21 | 100 | | | | | | | | | | 345 | | 343 |
| 22 | 100 | | | | | | | | | | 345 | | 343 |
| 23 | 100 | | | | | | | | | | 345 | | 343 |
| 24 | 100 | | | | | | | | | | 345 | | 343 |
| 25 | 100 | | | | | | | | | | 345 | | 343 |
| 26 | 100 | | | | | | | | | | 345 | | 343 |
| 27 | 100 | | | | | | | | | | 345 | | 343 |
| 28 | 100 | | | | | | | | | | 345 | | 343 |
| 29 | 100 | | | | | | | | | | 345 | | 343 |
| 30 | 100 | | | | | | | | | | 345 | | 343 |
| 31 | 100 | | | | | | | | | | 345 | | 343 |
| 32 | 100 | | | | | | | | | | 345 | | 343 |
| 33 | 100 | | | | | | | | | | 345 | | 343 |
| 34 | 100 | | | | | | | | | | 345 | | 343 |
| 35 | 100 | | | | | | | | | | 345 | | 343 |
| 36 | 100 | | | | | | | | | | 345 | | 343 |
| 37 | 100 | | | | | | | | | | 345 | | 343 |
| 38 | 100 | | | | | | | | | | 345 | | 343 |
| 39 | 100 | | | | | | | | | | 345 | | 343 |
| 40 | 100 | | | | | | | | | | 345 | | 343 |
| 41 | 100 | | | | | | | | | | 345 | | 343 |
| 42 | 100 | | | | | | | | | | 345 | | 343 |
| 43 | 100 | | | | | | | | | | 345 | | 343 |
| 44 | 100 | | | | | | | | | | 345 | | 343 |
| 45 | 100 | | | | | | | | | | 345 | | 343 |
| 46 | 100 | | | | | | | | | | 345 | | 343 |
| 47 | 100 | | | | | | | | | | 345 | | 343 |
| 48 | 100 | | | | | | | | | | 345 | | 343 |
| 49 | 100 | | | | | | | | | | 345 | | 343 |
| 50 | 100 | | | | | | | | | | 345 | | 343 |
| 51 | 100 | | | | | | | | | | 345 | | 343 |
| 52 | 100 | | | | | | | | | | 345 | | 343 |
| 53 | 100 | | | | | | | | | | 345 | | 343 |
| 54 | 100 | | | | | | | | | | 345 | | 343 |
| 55 | 100 | | | | | | | | | | 345 | | 343 |
| 56 | 100 | | | | | | | | | | 345 | | 343 |
| 57 | 100 | | | | | | | | | | 345 | | 343 |
| 58 | 100 | | | | | | | | | | 345 | | 343 |
| 59 | 100 | | | | | | | | | | 345 | | 343 |
| 60 | 100 | | | | | | | | | | 345 | | 343 |
| 61 | 100 | | | | | | | | | | 345 | | 343 |
| 62 | 100 | | | | | | | | | | 345 | | 343 |
| 63 | 100 | | | | | | | | | | 345 | | 343 |
| 64 | 100 | | | | | | | | | | 345 | | 343 |
| 65 | 100 | | | | | | | | | | 345 | | 343 |
| 66 | 100 | | | | | | | | | | 345 | | 343 |
| 67 | 100 | | | | | | | | | | 345 | | 343 |
| 68 | 100 | | | | | | | | | | 345 | | 343 |
| 69 | 100 | | | | | | | | | | 345 | | 343 |
| 70 | 100 | | | | | | | | | | 345 | | 343 |
| 71 | 100 | | | | | | | | | | 345 | | 343 |
| 72 | 100 | | | | | | | | | | 345 | | 343 |
| 73 | 100 | | | | | | | | | | 345 | | 343 |
| 74 | 100 | | | | | | | | | | 345 | | 343 |
| 75 | 100 | | | | | | | | | | 345 | | 343 |
| 76 | 100 | | | | | | | | | | 345 | | 343 |
| 77 | 100 | | | | | | | | | | 345 | | 343 |
| 78 | 100 | | | | | | | | | | 345 | | 343 |
| 79 | 100 | | | | | | | | | | 345 | | 343 |
| 80 | 100 | | | | | | | | | | 345 | | 343 |
| 81 | 100 | | | | | | | | | | 345 | | 343 |
| 82 | 100 | | | | | | | | | | 345 | | 343 |
| 83 | 100 | | | | | | | | | | 345 | | 343 |
| 84 | 100 | | | | | | | | | | 345 | | 343 |
| 85 | 100 | | | | | | | | | | 345 | | 343 |
| 86 | 100 | | | | | | | | | | 345 | | 343 |
| 87 | 100 | | | | | | | | | | 345 | | 343 |
| 88 | 100 | | | | | | | | | | 345 | | 343 |
| 89 | 100 | | | | | | | | | | 345 | | 343 |
| 90 | 100 | | | | | | | | | | 345 | | 343 |
| 91 | 100 | | | | | | | | | | 345 | | 343 |
| 92 | 100 | | | | | | | | | | 345 | | 343 |
| 93 | 100 | | | | | | | | | | 345 | | 343 |
| 94 | 100 | | | | | | | | | | 345 | | 343 |
| 95 | 100 | | | | | | | | | | 345 | | 343 |
| 96 | 100 | | | | | | | | | | 345 | | 343 |
| 97 | 100 | | | | | | | | | | 345 | | 343 |
| 98 | 100 | | | | | | | | | | 345 | | 343 |
| 99 | 100 | | | | | | | | | | 345 | | 343 |
| 100 | 100 | | | | | | | | | | 345 | | 343 |

ORIGINAL PAGE IS
OF POOR QUALITY

DATE OF RUN IS 09/20/76

PACK NUMBER IS 223A

SHADOW PERIOD IS 2

CYCLE IS 13

211.

WQEC/C 77-134
PAGE IS 14.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|-------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 00.00 | 0.00 | 57 | V | V | V | V | V | V | V | V | 1.77 | 1.81 | 1.70 |
| 00.01 | 0.00 | 57 | V | V | V | V | V | V | V | V | 1.75 | 1.80 | 1.65 |
| 00.02 | 0.00 | 57 | V | V | V | V | V | V | V | V | 1.72 | 1.79 | 1.61 |
| 00.03 | 0.00 | 57 | V | V | V | V | V | V | V | V | 1.68 | 1.75 | 1.53 |
| 00.04 | 0.00 | 57 | V | V | V | V | V | V | V | V | 1.64 | 1.73 | 1.49 |
| 00.05 | 0.00 | 57 | V | V | V | V | V | V | V | V | 1.59 | 1.71 | 1.45 |
| 00.06 | 0.00 | 57 | V | V | V | V | V | V | V | V | 1.47 | 1.66 | 1.40 |
| 00.07 | 0.00 | 57 | V | V | V | V | V | V | V | V | 1.40 | 1.60 | 1.33 |
| 00.08 | 0.00 | 57 | V | V | V | V | V | V | V | V | 1.33 | 1.53 | 1.26 |
| 00.09 | 0.00 | 57 | V | V | V | V | V | V | V | V | 1.24 | 1.46 | 1.19 |
| 00.10 | 0.00 | 57 | V | V | V | V | V | V | V | V | 1.15 | 1.38 | 1.10 |
| 00.11 | 0.00 | 57 | V | V | V | V | V | V | V | V | 1.07 | 1.30 | 1.02 |
| 00.12 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.98 | 1.23 | 0.95 |
| 00.13 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.90 | 1.15 | 0.87 |
| 00.14 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.81 | 1.08 | 0.79 |
| 00.15 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.74 | 1.01 | 0.72 |
| 00.16 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.65 | 0.94 | 0.64 |
| 00.17 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.58 | 0.88 | 0.57 |
| 00.18 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.49 | 0.81 | 0.48 |
| 00.19 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.42 | 0.74 | 0.41 |
| 00.20 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.33 | 0.66 | 0.32 |
| 00.21 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.22 | 0.55 | 0.21 |
| 00.22 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.11 | 0.44 | 0.10 |
| 00.23 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.33 | 0.00 |
| 00.24 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.22 | 0.00 |
| 00.25 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.11 | 0.00 |
| 00.26 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.27 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.28 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.29 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.30 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.31 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.32 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.33 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.34 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.35 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.36 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.37 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.38 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.39 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.40 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.41 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.42 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.43 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.44 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.45 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.46 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.47 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.48 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.49 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.50 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.51 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.52 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.53 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.54 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.55 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.56 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.57 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.58 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.59 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.60 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.61 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.62 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.63 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.64 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.65 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.66 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.67 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.68 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.69 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.70 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.71 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.72 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.73 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.74 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.75 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.76 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.77 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.78 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.79 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.80 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.81 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.82 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.83 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.84 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.85 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.86 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.87 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.88 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.89 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.90 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.91 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.92 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.93 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.94 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.95 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.96 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.97 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.98 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 00.99 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |
| 01.00 | 0.00 | 57 | V | V | V | V | V | V | V | V | 0.00 | 0.00 | 0.00 |

DATE OF RUN IS 08/27/76

PACK NUMBER IS 223A

SHADOW PERIOD IS 3

CYCLE IS

393.

WQE 77-134
PAGE IS 48.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|-------|------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 1.099 | V1 | 1.341 | V2 | 1.340 | V4 | 1.340 | V5 | 1.342 | .000 | 1.342 | 1.345 | 1.340 |
| 1.315 | V1 | 1.315 | V2 | 1.315 | V4 | 1.315 | V5 | 1.316 | .000 | 1.315 | 1.318 | 1.313 |
| 1.303 | V1 | 1.303 | V2 | 1.304 | V4 | 1.304 | V5 | 1.303 | .000 | 1.303 | 1.304 | 1.302 |
| 1.294 | V1 | 1.294 | V2 | 1.294 | V4 | 1.294 | V5 | 1.294 | .000 | 1.294 | 1.296 | 1.292 |
| 1.288 | V1 | 1.288 | V2 | 1.288 | V4 | 1.288 | V5 | 1.288 | .000 | 1.287 | 1.289 | 1.285 |
| 1.281 | V1 | 1.281 | V2 | 1.281 | V4 | 1.281 | V5 | 1.281 | .000 | 1.281 | 1.282 | 1.280 |
| 1.277 | V1 | 1.277 | V2 | 1.277 | V4 | 1.277 | V5 | 1.277 | .000 | 1.277 | 1.278 | 1.276 |
| 1.274 | V1 | 1.274 | V2 | 1.274 | V4 | 1.274 | V5 | 1.274 | .000 | 1.273 | 1.275 | 1.272 |
| 1.271 | V1 | 1.271 | V2 | 1.271 | V4 | 1.271 | V5 | 1.271 | .000 | 1.271 | 1.271 | 1.270 |
| 1.268 | V1 | 1.268 | V2 | 1.268 | V4 | 1.268 | V5 | 1.268 | .000 | 1.269 | 1.270 | 1.268 |
| 1.266 | V1 | 1.266 | V2 | 1.266 | V4 | 1.266 | V5 | 1.267 | .000 | 1.267 | 1.268 | 1.266 |
| 1.265 | V1 | 1.265 | V2 | 1.265 | V4 | 1.265 | V5 | 1.265 | .000 | 1.265 | 1.266 | 1.263 |
| 1.263 | V1 | 1.263 | V2 | 1.263 | V4 | 1.263 | V5 | 1.263 | .000 | 1.263 | 1.264 | 1.262 |
| 1.261 | V1 | 1.261 | V2 | 1.261 | V4 | 1.261 | V5 | 1.261 | .000 | 1.261 | 1.262 | 1.260 |
| 1.259 | V1 | 1.259 | V2 | 1.259 | V4 | 1.259 | V5 | 1.259 | .000 | 1.259 | 1.260 | 1.258 |
| 1.256 | V1 | 1.256 | V2 | 1.256 | V4 | 1.256 | V5 | 1.256 | .000 | 1.256 | 1.258 | 1.255 |
| 1.255 | V1 | 1.255 | V2 | 1.255 | V4 | 1.255 | V5 | 1.255 | .000 | 1.255 | 1.255 | 1.252 |
| 1.253 | V1 | 1.253 | V2 | 1.253 | V4 | 1.253 | V5 | 1.253 | .000 | 1.253 | 1.253 | 1.250 |
| 1.251 | V1 | 1.251 | V2 | 1.251 | V4 | 1.251 | V5 | 1.251 | .000 | 1.251 | 1.253 | 1.250 |
| 1.249 | V1 | 1.249 | V2 | 1.249 | V4 | 1.249 | V5 | 1.249 | .000 | 1.249 | 1.250 | 1.247 |
| 1.246 | V1 | 1.246 | V2 | 1.246 | V4 | 1.246 | V5 | 1.246 | .000 | 1.247 | 1.248 | 1.246 |
| 1.243 | V1 | 1.243 | V2 | 1.243 | V4 | 1.243 | V5 | 1.243 | .000 | 1.244 | 1.245 | 1.242 |
| 1.240 | V1 | 1.240 | V2 | 1.240 | V4 | 1.240 | V5 | 1.240 | .000 | 1.241 | 1.242 | 1.240 |
| 1.238 | V1 | 1.238 | V2 | 1.238 | V4 | 1.238 | V5 | 1.238 | .000 | 1.239 | 1.240 | 1.238 |
| 1.235 | V1 | 1.235 | V2 | 1.235 | V4 | 1.235 | V5 | 1.235 | .000 | 1.236 | 1.238 | 1.234 |
| 1.230 | V1 | 1.230 | V2 | 1.230 | V4 | 1.230 | V5 | 1.230 | .000 | 1.231 | 1.233 | 1.230 |
| 1.228 | V1 | 1.228 | V2 | 1.228 | V4 | 1.228 | V5 | 1.228 | .000 | 1.228 | 1.230 | 1.226 |
| 1.226 | V1 | 1.226 | V2 | 1.226 | V4 | 1.226 | V5 | 1.226 | .000 | 1.224 | 1.226 | 1.221 |
| 1.223 | V1 | 1.223 | V2 | 1.223 | V4 | 1.223 | V5 | 1.223 | .000 | 1.221 | 1.223 | 1.219 |
| 1.217 | V1 | 1.217 | V2 | 1.217 | V4 | 1.217 | V5 | 1.217 | .000 | 1.218 | 1.220 | 1.216 |
| 1.216 | V1 | 1.216 | V2 | 1.216 | V4 | 1.216 | V5 | 1.216 | .000 | 1.214 | 1.216 | 1.211 |
| 1.211 | V1 | 1.211 | V2 | 1.211 | V4 | 1.211 | V5 | 1.211 | .000 | 1.211 | 1.213 | 1.208 |
| 1.210 | V1 | 1.210 | V2 | 1.210 | V4 | 1.210 | V5 | 1.210 | .000 | 1.208 | 1.210 | 1.205 |
| 1.207 | V1 | 1.207 | V2 | 1.207 | V4 | 1.207 | V5 | 1.207 | .000 | 1.205 | 1.209 | 1.202 |
| 1.204 | V1 | 1.204 | V2 | 1.204 | V4 | 1.204 | V5 | 1.204 | .000 | 1.202 | 1.205 | 1.199 |
| 1.201 | V1 | 1.201 | V2 | 1.201 | V4 | 1.201 | V5 | 1.201 | .000 | 1.201 | 1.203 | 1.198 |
| 1.199 | V1 | 1.199 | V2 | 1.199 | V4 | 1.199 | V5 | 1.199 | .000 | 1.200 | 1.200 | 1.192 |
| 1.198 | V1 | 1.198 | V2 | 1.198 | V4 | 1.198 | V5 | 1.198 | .000 | 1.196 | 1.198 | 1.190 |
| 1.197 | V1 | 1.197 | V2 | 1.197 | V4 | 1.197 | V5 | 1.197 | .000 | 1.194 | 1.197 | 1.190 |
| 1.190 | V1 | 1.190 | V2 | 1.190 | V4 | 1.190 | V5 | 1.190 | .000 | 1.193 | 1.195 | 1.189 |
| 1.189 | V1 | 1.189 | V2 | 1.189 | V4 | 1.189 | V5 | 1.189 | .000 | 1.192 | 1.195 | 1.188 |
| 1.188 | V1 | 1.188 | V2 | 1.188 | V4 | 1.188 | V5 | 1.188 | .000 | 1.191 | 1.195 | 1.186 |
| 1.187 | V1 | 1.187 | V2 | 1.187 | V4 | 1.187 | V5 | 1.187 | .000 | 1.190 | 1.193 | 1.184 |
| 1.186 | V1 | 1.186 | V2 | 1.186 | V4 | 1.186 | V5 | 1.186 | .000 | 1.188 | 1.192 | 1.183 |
| 1.184 | V1 | 1.184 | V2 | 1.184 | V4 | 1.184 | V5 | 1.184 | .000 | 1.187 | 1.191 | 1.180 |
| 1.183 | V1 | 1.183 | V2 | 1.183 | V4 | 1.183 | V5 | 1.183 | .000 | 1.185 | 1.190 | 1.177 |
| 1.180 | V1 | 1.180 | V2 | 1.180 | V4 | 1.180 | V5 | 1.180 | .000 | 1.184 | 1.189 | 1.175 |
| 1.179 | V1 | 1.179 | V2 | 1.179 | V4 | 1.179 | V5 | 1.179 | .000 | 1.182 | 1.187 | 1.171 |
| 1.178 | V1 | 1.178 | V2 | 1.178 | V4 | 1.178 | V5 | 1.178 | .000 | 1.181 | 1.187 | 1.169 |
| 1.177 | V1 | 1.177 | V2 | 1.177 | V4 | 1.177 | V5 | 1.177 | .000 | 1.179 | 1.185 | 1.166 |
| 1.174 | V1 | 1.174 | V2 | 1.174 | V4 | 1.174 | V5 | 1.174 | .000 | 1.177 | 1.183 | 1.162 |
| 1.171 | V1 | 1.171 | V2 | 1.171 | V4 | 1.171 | V5 | 1.171 | .000 | 1.175 | 1.182 | 1.158 |
| 1.169 | V1 | 1.169 | V2 | 1.169 | V4 | 1.169 | V5 | 1.169 | .000 | 1.173 | 1.181 | 1.149 |
| 1.165 | V1 | 1.165 | V2 | 1.165 | V4 | 1.165 | V5 | 1.165 | .000 | 1.171 | 1.180 | 1.149 |
| 1.161 | V1 | 1.161 | V2 | 1.161 | V4 | 1.161 | V5 | 1.161 | .000 | 1.167 | 1.178 | 1.149 |

ORIGINAL PAGE IS
OF POOR QUALITY

DATE OF RUN IS 08/27/76

PACK NUMBER IS 223A

SHADOW PERIOD IS 3

CYCLE IS

393.

WQEC/C 77-134
PAGE IS 49.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 6.00 | 1.170 | V1 | 1.170 | V3 | 1.170 | V4 | 1.170 | V5 | 1.170 | 1.163 | 1.178 | 1.140 |
| 6.01 | 1.171 | V1 | 1.171 | V3 | 1.171 | V4 | 1.171 | V5 | 1.171 | 1.157 | 1.176 | 1.126 |
| 6.02 | 1.172 | V1 | 1.172 | V3 | 1.172 | V4 | 1.172 | V5 | 1.172 | 1.150 | 1.172 | 1.112 |
| 6.03 | 1.173 | V1 | 1.173 | V3 | 1.173 | V4 | 1.173 | V5 | 1.173 | 1.145 | 1.171 | 1.105 |
| 6.04 | 1.174 | V1 | 1.174 | V3 | 1.174 | V4 | 1.174 | V5 | 1.174 | 1.138 | 1.169 | 1.098 |
| 6.05 | 1.175 | V1 | 1.175 | V3 | 1.175 | V4 | 1.175 | V5 | 1.175 | 1.131 | 1.166 | 1.090 |
| 6.06 | 1.176 | V1 | 1.176 | V3 | 1.176 | V4 | 1.176 | V5 | 1.176 | 1.122 | 1.161 | 1.085 |
| 6.07 | 1.177 | V1 | 1.177 | V3 | 1.177 | V4 | 1.177 | V5 | 1.177 | 1.112 | 1.158 | 1.077 |
| 6.08 | 1.178 | V1 | 1.178 | V3 | 1.178 | V4 | 1.178 | V5 | 1.178 | 1.104 | 1.151 | 1.070 |
| 6.09 | 1.179 | V1 | 1.179 | V3 | 1.179 | V4 | 1.179 | V5 | 1.179 | 1.095 | 1.141 | 1.063 |
| 6.10 | 1.180 | V1 | 1.180 | V3 | 1.180 | V4 | 1.180 | V5 | 1.180 | 1.088 | 1.129 | 1.057 |
| 6.11 | 1.181 | V1 | 1.181 | V3 | 1.181 | V4 | 1.181 | V5 | 1.181 | 1.079 | 1.114 | 1.051 |
| 6.12 | 1.182 | V1 | 1.182 | V3 | 1.182 | V4 | 1.182 | V5 | 1.182 | 1.071 | 1.103 | 1.045 |
| 6.13 | 1.183 | V1 | 1.183 | V3 | 1.183 | V4 | 1.183 | V5 | 1.183 | 1.064 | 1.095 | 1.038 |
| 6.14 | 1.184 | V1 | 1.184 | V3 | 1.184 | V4 | 1.184 | V5 | 1.184 | 1.056 | 1.087 | 1.028 |
| 6.15 | 1.185 | V1 | 1.185 | V3 | 1.185 | V4 | 1.185 | V5 | 1.185 | 1.047 | 1.079 | 1.018 |
| 6.16 | 1.186 | V1 | 1.186 | V3 | 1.186 | V4 | 1.186 | V5 | 1.186 | 1.039 | 1.071 | 1.007 |
| 6.17 | 1.187 | V1 | 1.187 | V3 | 1.187 | V4 | 1.187 | V5 | 1.187 | 1.036 | 1.068 | 1.002 |
| 6.18 | 1.188 | V1 | 1.188 | V3 | 1.188 | V4 | 1.188 | V5 | 1.188 | 1.032 | 1.064 | 1.000 |
| 6.19 | 1.189 | V1 | 1.189 | V3 | 1.189 | V4 | 1.189 | V5 | 1.189 | 1.025 | 1.060 | 1.000 |
| 6.20 | 1.190 | V1 | 1.190 | V3 | 1.190 | V4 | 1.190 | V5 | 1.190 | 1.019 | 1.056 | 1.000 |
| 6.21 | 1.191 | V1 | 1.191 | V3 | 1.191 | V4 | 1.191 | V5 | 1.191 | 1.015 | 1.052 | 1.000 |
| 6.22 | 1.192 | V1 | 1.192 | V3 | 1.192 | V4 | 1.192 | V5 | 1.192 | 1.011 | 1.048 | 1.000 |
| 6.23 | 1.193 | V1 | 1.193 | V3 | 1.193 | V4 | 1.193 | V5 | 1.193 | 1.007 | 1.044 | 1.000 |
| 6.24 | 1.194 | V1 | 1.194 | V3 | 1.194 | V4 | 1.194 | V5 | 1.194 | 1.003 | 1.040 | 1.000 |
| 6.25 | 1.195 | V1 | 1.195 | V3 | 1.195 | V4 | 1.195 | V5 | 1.195 | 1.000 | 1.036 | 1.000 |
| 6.26 | 1.196 | V1 | 1.196 | V3 | 1.196 | V4 | 1.196 | V5 | 1.196 | 1.000 | 1.032 | 1.000 |
| 6.27 | 1.197 | V1 | 1.197 | V3 | 1.197 | V4 | 1.197 | V5 | 1.197 | 1.000 | 1.028 | 1.000 |
| 6.28 | 1.198 | V1 | 1.198 | V3 | 1.198 | V4 | 1.198 | V5 | 1.198 | 1.000 | 1.024 | 1.000 |
| 6.29 | 1.199 | V1 | 1.199 | V3 | 1.199 | V4 | 1.199 | V5 | 1.199 | 1.000 | 1.020 | 1.000 |
| 6.30 | 1.200 | V1 | 1.200 | V3 | 1.200 | V4 | 1.200 | V5 | 1.200 | 1.000 | 1.016 | 1.000 |
| 6.31 | 1.201 | V1 | 1.201 | V3 | 1.201 | V4 | 1.201 | V5 | 1.201 | 1.000 | 1.012 | 1.000 |
| 6.32 | 1.202 | V1 | 1.202 | V3 | 1.202 | V4 | 1.202 | V5 | 1.202 | 1.000 | 1.008 | 1.000 |
| 6.33 | 1.203 | V1 | 1.203 | V3 | 1.203 | V4 | 1.203 | V5 | 1.203 | 1.000 | 1.004 | 1.000 |
| 6.34 | 1.204 | V1 | 1.204 | V3 | 1.204 | V4 | 1.204 | V5 | 1.204 | 1.000 | 1.000 | 1.000 |
| 6.35 | 1.205 | V1 | 1.205 | V3 | 1.205 | V4 | 1.205 | V5 | 1.205 | 1.000 | 1.000 | 1.000 |
| 6.36 | 1.206 | V1 | 1.206 | V3 | 1.206 | V4 | 1.206 | V5 | 1.206 | 1.000 | 1.000 | 1.000 |
| 6.37 | 1.207 | V1 | 1.207 | V3 | 1.207 | V4 | 1.207 | V5 | 1.207 | 1.000 | 1.000 | 1.000 |
| 6.38 | 1.208 | V1 | 1.208 | V3 | 1.208 | V4 | 1.208 | V5 | 1.208 | 1.000 | 1.000 | 1.000 |
| 6.39 | 1.209 | V1 | 1.209 | V3 | 1.209 | V4 | 1.209 | V5 | 1.209 | 1.000 | 1.000 | 1.000 |
| 6.40 | 1.210 | V1 | 1.210 | V3 | 1.210 | V4 | 1.210 | V5 | 1.210 | 1.000 | 1.000 | 1.000 |
| 6.41 | 1.211 | V1 | 1.211 | V3 | 1.211 | V4 | 1.211 | V5 | 1.211 | 1.000 | 1.000 | 1.000 |
| 6.42 | 1.212 | V1 | 1.212 | V3 | 1.212 | V4 | 1.212 | V5 | 1.212 | 1.000 | 1.000 | 1.000 |
| 6.43 | 1.213 | V1 | 1.213 | V3 | 1.213 | V4 | 1.213 | V5 | 1.213 | 1.000 | 1.000 | 1.000 |
| 6.44 | 1.214 | V1 | 1.214 | V3 | 1.214 | V4 | 1.214 | V5 | 1.214 | 1.000 | 1.000 | 1.000 |
| 6.45 | 1.215 | V1 | 1.215 | V3 | 1.215 | V4 | 1.215 | V5 | 1.215 | 1.000 | 1.000 | 1.000 |
| 6.46 | 1.216 | V1 | 1.216 | V3 | 1.216 | V4 | 1.216 | V5 | 1.216 | 1.000 | 1.000 | 1.000 |
| 6.47 | 1.217 | V1 | 1.217 | V3 | 1.217 | V4 | 1.217 | V5 | 1.217 | 1.000 | 1.000 | 1.000 |
| 6.48 | 1.218 | V1 | 1.218 | V3 | 1.218 | V4 | 1.218 | V5 | 1.218 | 1.000 | 1.000 | 1.000 |
| 6.49 | 1.219 | V1 | 1.219 | V3 | 1.219 | V4 | 1.219 | V5 | 1.219 | 1.000 | 1.000 | 1.000 |
| 6.50 | 1.220 | V1 | 1.220 | V3 | 1.220 | V4 | 1.220 | V5 | 1.220 | 1.000 | 1.000 | 1.000 |
| 6.51 | 1.221 | V1 | 1.221 | V3 | 1.221 | V4 | 1.221 | V5 | 1.221 | 1.000 | 1.000 | 1.000 |
| 6.52 | 1.222 | V1 | 1.222 | V3 | 1.222 | V4 | 1.222 | V5 | 1.222 | 1.000 | 1.000 | 1.000 |
| 6.53 | 1.223 | V1 | 1.223 | V3 | 1.223 | V4 | 1.223 | V5 | 1.223 | 1.000 | 1.000 | 1.000 |
| 6.54 | 1.224 | V1 | 1.224 | V3 | 1.224 | V4 | 1.224 | V5 | 1.224 | 1.000 | 1.000 | 1.000 |
| 6.55 | 1.225 | V1 | 1.225 | V3 | 1.225 | V4 | 1.225 | V5 | 1.225 | 1.000 | 1.000 | 1.000 |
| 6.56 | 1.226 | V1 | 1.226 | V3 | 1.226 | V4 | 1.226 | V5 | 1.226 | 1.000 | 1.000 | 1.000 |
| 6.57 | 1.227 | V1 | 1.227 | V3 | 1.227 | V4 | 1.227 | V5 | 1.227 | 1.000 | 1.000 | 1.000 |
| 6.58 | 1.228 | V1 | 1.228 | V3 | 1.228 | V4 | 1.228 | V5 | 1.228 | 1.000 | 1.000 | 1.000 |
| 6.59 | 1.229 | V1 | 1.229 | V3 | 1.229 | V4 | 1.229 | V5 | 1.229 | 1.000 | 1.000 | 1.000 |
| 6.60 | 1.230 | V1 | 1.230 | V3 | 1.230 | V4 | 1.230 | V5 | 1.230 | 1.000 | 1.000 | 1.000 |
| 6.61 | 1.231 | V1 | 1.231 | V3 | 1.231 | V4 | 1.231 | V5 | 1.231 | 1.000 | 1.000 | 1.000 |
| 6.62 | 1.232 | V1 | 1.232 | V3 | 1.232 | V4 | 1.232 | V5 | 1.232 | 1.000 | 1.000 | 1.000 |
| 6.63 | 1.233 | V1 | 1.233 | V3 | 1.233 | V4 | 1.233 | V5 | 1.233 | 1.000 | 1.000 | 1.000 |
| 6.64 | 1.234 | V1 | 1.234 | V3 | 1.234 | V4 | 1.234 | V5 | 1.234 | 1.000 | 1.000 | 1.000 |
| 6.65 | 1.235 | V1 | 1.235 | V3 | 1.235 | V4 | 1.235 | V5 | 1.235 | 1.000 | 1.000 | 1.000 |
| 6.66 | 1.236 | V1 | 1.236 | V3 | 1.236 | V4 | 1.236 | V5 | 1.236 | 1.000 | 1.000 | 1.000 |
| 6.67 | 1.237 | V1 | 1.237 | V3 | 1.237 | V4 | 1.237 | V5 | 1.237 | 1.000 | 1.000 | 1.000 |
| 6.68 | 1.238 | V1 | 1.238 | V3 | 1.238 | V4 | 1.238 | V5 | 1.238 | 1.000 | 1.000 | 1.000 |
| 6.69 | 1.239 | V1 | 1.239 | V3 | 1.239 | V4 | 1.239 | V5 | 1.239 | 1.000 | 1.000 | 1.000 |
| 6.70 | 1.240 | V1 | 1.240 | V3 | 1.240 | V4 | 1.240 | V5 | 1.240 | 1.000 | 1.000 | 1.000 |
| 6.71 | 1.241 | V1 | 1.241 | V3 | 1.241 | V4 | 1.241 | V5 | 1.241 | 1.000 | 1.000 | 1.000 |
| 6.72 | 1.242 | V1 | 1.242 | V3 | 1.242 | V4 | 1.242 | V5 | 1.242 | 1.000 | 1.000 | 1.000 |
| 6.73 | 1.243 | V1 | 1.243 | V3 | 1.243 | V4 | 1.243 | V5 | 1.243 | 1.000 | 1.000 | 1.000 |
| 6.74 | 1.244 | V1 | 1.244 | V3 | 1.244 | V4 | 1.244 | V5 | 1.244 | 1.000 | 1.000 | 1.000 |
| 6.75 | 1.245 | V1 | 1.245 | V3 | 1.245 | V4 | 1.245 | V5 | 1.245 | 1.000 | 1.000 | 1.000 |
| 6.76 | 1.246 | V1 | 1.246 | V3 | 1.246 | V4 | 1.246 | V5 | 1.246 | 1.000 | 1.000 | 1.000 |
| 6.77 | 1.247 | V1 | 1.247 | V3 | 1.247 | V4 | 1.247 | V5 | 1.247 | 1.000 | 1.000 | 1.000 |
| 6.78 | 1.248 | V1 | 1.248 | V3 | 1.248 | V4 | 1.248 | V5 | 1.248 | 1.000 | 1.000 | 1.000 |
| 6.79 | 1.249 | V1 | 1.249 | V3 | 1.249 | V4 | 1.249 | V5 | 1.249 | 1.000 | 1.000 | 1.000 |
| 6.80 | 1.250 | V1 | 1.250 | V3 | 1.250 | V4 | 1.250 | V5 | 1.250 | 1.000 | 1.000 | 1.000 |
| 6.81 | 1.251 | V1 | 1.251 | V3 | 1.251 | V4 | 1.251 | V5 | 1.251 | 1.000 | 1.000 | 1.000 |
| 6.82 | 1.252 | V1 | 1.252 | V3 | 1.252 | V4 | 1.252 | V5 | 1.252 | 1.000 | 1.000 | 1.000 |
| 6.83 | 1.253 | V1 | 1.253 | V3 | 1.253 | V4 | 1.253 | V5 | 1.253 | 1.000 | 1.000 | 1.000 |
| 6.84 | 1.254 | V1 | 1.254 | V3 | 1.254 | V4 | 1.254 | V5 | 1.254 | 1.000 | 1.000 | 1.000 |
| 6.85 | 1.255 | V1 | 1.255 | V3 | 1.255 | V4 | 1.255 | V5 | 1.255 | 1.000 | 1.000 | 1.000 |
| 6.86 | 1.256 | V1 | 1.256 | V3 | 1.256 | V4 | 1.256 | V5 | 1.256 | 1.000 | 1.000 | 1.000 |
| 6.87 | 1.257 | V1 | 1.257 | V3 | 1.257 | V4 | 1.257 | V5 | 1.257 | 1.000 | 1.000 | 1.000 |
| 6.88 | 1.258 | V1 | 1.258 | V3 | 1.258 | V4 | 1.258 | V5 | 1.258 | 1.000 | 1.000 | 1.000 |
| 6.89 | 1.259 | V1 | 1.259 | V3 | 1.259 | V4 | 1.259 | V5 | 1.259 | 1.000 | 1.000 | 1.000 |
| 6.90 | 1.260 | V1 | 1.260 | V3 | 1.260 | V4 | 1.260 | V5 | 1.260 | 1.000 | 1.000 | 1.000 |
| 6.91 | 1.261 | V1 | 1.261 | V3 | 1.261 | V4 | 1.261 | V5 | 1.261 | 1.000 | 1.000 | 1.000 |
| 6.92 | 1.262 | V1 | 1.262 | V3 | 1.262 | V4 | 1.262 | V5 | 1.262 | 1.000 | 1.000 | 1.000 |
| 6.93 | 1.263 | V1 | 1.263 | V3 | 1.263 | V4 | 1.263 | V5 | 1.263 | 1.000 | 1.000 | 1.000 |
| 6.94 | 1.264 | V1 | 1.264 | V3 | 1.264 | V4 | 1.264 | V5 | 1.264 | 1.000 | 1.000 | 1.000 |
| 6.95 | 1.265 | V1 | 1.265 | V3 | 1.265 | V4 | 1.265 | V5 | 1.265 | 1.000 | 1.000 | 1.000 |
| 6.96 | 1.266 | V1 | 1.266 | V3 | 1.266 | V4 | 1.266 | V5 | 1.266 | 1.000 | 1.000 | 1.000 |
| 6.97 | 1.267 | V1 | 1.267 | V3 | 1.267 | V4 | 1.267 | V5 | 1.267 | 1.000 | 1.000 | 1.000 |
| 6.98 | 1.268 | V1 | 1.268 | V3 | 1.268 | V4 | 1.268 | V5 | 1.268 | 1.000 | 1.000 | 1.000 |
| 6.99 | 1.269 | V1 | 1.269 | V3 | 1.269 | V4 | 1.269 | V5 | 1.269 | 1.000 | 1.000 | 1.000 |
| 6.00 | 1.270 | V1 | 1.270 | V3 | 1.270 | V4 | 1.270 | V5 | 1.270 | 1.000 | 1.000 | 1.000 |

[illegible]

DATE OF RUN IS 09/10/76

PACK NUMBER IS 223A

SHADOW PERIOD IS 7

CYCLE IS

1312.

WQE 77-134
PAGE IS 3.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V | |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|-------|
| 1345. | .246 | V1 | 1.344 | V2 | 1.343 | V3 | 1.342 | V4 | 1.345 | V5 | 1.343 | 1.344 | 1.346 | 1.342 |
| 1353. | .984 | V1 | 1.297 | V2 | 1.290 | V3 | 1.291 | V4 | 1.291 | V5 | 1.289 | 1.291 | 1.292 | 1.289 |
| 1400. | 1.722 | V1 | 1.271 | V2 | 1.269 | V3 | 1.270 | V4 | 1.270 | V5 | 1.268 | 1.270 | 1.271 | 1.268 |
| 1407. | 2.460 | V1 | 1.260 | V2 | 1.259 | V3 | 1.260 | V4 | 1.259 | V5 | 1.258 | 1.259 | 1.260 | 1.258 |
| 1414. | 3.198 | V1 | 1.250 | V2 | 1.249 | V3 | 1.251 | V4 | 1.250 | V5 | 1.248 | 1.250 | 1.251 | 1.248 |
| 1421. | 3.936 | V1 | 1.230 | V2 | 1.233 | V3 | 1.241 | V4 | 1.240 | V5 | 1.238 | 1.239 | 1.241 | 1.238 |
| 1429. | 4.674 | V1 | 1.220 | V2 | 1.229 | V3 | 1.230 | V4 | 1.229 | V5 | 1.227 | 1.229 | 1.230 | 1.227 |
| 1436. | 5.412 | V1 | 1.217 | V2 | 1.218 | V3 | 1.219 | V4 | 1.217 | V5 | 1.215 | 1.217 | 1.219 | 1.215 |
| 1443. | 6.150 | V1 | 1.204 | V2 | 1.206 | V3 | 1.206 | V4 | 1.205 | V5 | 1.202 | 1.205 | 1.206 | 1.202 |
| 1450. | 6.888 | V1 | 1.191 | V2 | 1.194 | V3 | 1.194 | V4 | 1.191 | V5 | 1.188 | 1.192 | 1.194 | 1.188 |
| 1457. | 7.626 | V1 | 1.181 | V2 | 1.185 | V3 | 1.185 | V4 | 1.180 | V5 | 1.176 | 1.181 | 1.185 | 1.176 |
| 1505. | 8.364 | V1 | 1.177 | V2 | 1.180 | V3 | 1.180 | V4 | 1.175 | V5 | 1.170 | 1.176 | 1.180 | 1.170 |
| 1512. | 9.102 | V1 | 1.177 | V2 | 1.176 | V3 | 1.176 | V4 | 1.169 | V5 | 1.162 | 1.171 | 1.176 | 1.162 |
| 1519. | 9.840 | V1 | 1.164 | V2 | 1.172 | V3 | 1.172 | V4 | 1.161 | V5 | 1.147 | 1.164 | 1.172 | 1.147 |
| 1526. | 10.578 | V1 | 1.154 | V2 | 1.166 | V3 | 1.167 | V4 | 1.143 | V5 | 1.119 | 1.150 | 1.167 | 1.119 |
| 1533. | 11.316 | V1 | 1.133 | V2 | 1.154 | V3 | 1.160 | V4 | 1.107 | V5 | 1.098 | 1.130 | 1.160 | 1.098 |
| 1541. | 12.054 | V1 | 1.103 | V2 | 1.117 | V3 | 1.136 | V4 | 1.087 | V5 | 1.080 | 1.105 | 1.136 | 1.080 |
| 1548. | 12.792 | V1 | 1.080 | V2 | 1.092 | V3 | 1.099 | V4 | 1.067 | V5 | 1.063 | 1.080 | 1.099 | 1.063 |
| 1555. | 13.530 | V1 | 1.050 | V2 | 1.069 | V3 | 1.077 | V4 | 1.050 | V5 | 1.050 | 1.061 | 1.077 | 1.050 |
| 1602. | 14.268 | V1 | 1.039 | V2 | 1.050 | V3 | 1.056 | V4 | 1.031 | V5 | 1.033 | 1.042 | 1.056 | 1.031 |
| 1609. | 15.006 | V1 | 1.011 | V2 | 1.029 | V3 | 1.039 | V4 | 1.001 | V5 | 1.007 | 1.017 | 1.039 | 1.001 |
| 1614. | 15.744 | V1 | .970 | V2 | .999 | V3 | .012 | V4 | .965 | V5 | .969 | .983 | .012 | .965 |
| 1617. | 16.482 | V1 | .970 | V2 | .999 | V3 | .012 | V4 | .965 | V5 | .969 | .983 | .012 | .965 |
| 1624. | 17.220 | V1 | .884 | V2 | .964 | V3 | .981 | V4 | .893 | V5 | .895 | .923 | .981 | .884 |
| 1631. | 17.958 | V1 | .855 | V2 | .935 | V3 | .934 | V4 | .736 | V5 | .709 | .788 | .934 | .666 |
| 1633. | 18.696 | V1 | .570 | V2 | .858 | V3 | .909 | V4 | .666 | V5 | .624 | .725 | .909 | .570 |

ORIGINAL PAGE IS
OF POOR QUALITY

DATE OF RUN IS 09/10/76

PACK NUMBER IS 223A

SHADOW PERIOD IS 8

CYCLE IS 1591.

WQEC/C 77-134
PAGE IS 5.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V | |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|-------|
| 1242. | .240 | V1 | 1.350 | V2 | 1.347 | V3 | 1.347 | V4 | 1.347 | .000 | 1.348 | 1.350 | 1.347 |
| 1245. | .480 | V1 | 1.324 | V2 | 1.323 | V3 | 1.323 | V4 | 1.323 | .000 | 1.324 | 1.326 | 1.323 |
| 1252. | 1.210 | V1 | 1.284 | V2 | 1.283 | V3 | 1.283 | V4 | 1.284 | .000 | 1.284 | 1.284 | 1.282 |
| 1306. | 2.660 | V1 | 1.266 | V2 | 1.266 | V3 | 1.266 | V4 | 1.267 | .000 | 1.266 | 1.267 | 1.264 |
| 1314. | 3.380 | V1 | 1.254 | V2 | 1.254 | V3 | 1.253 | V4 | 1.254 | .000 | 1.253 | 1.254 | 1.252 |
| 1321. | 4.110 | V1 | 1.242 | V2 | 1.243 | V3 | 1.242 | V4 | 1.243 | .000 | 1.242 | 1.243 | 1.241 |
| 1335. | 5.560 | V1 | 1.231 | V2 | 1.232 | V3 | 1.231 | V4 | 1.232 | .000 | 1.231 | 1.232 | 1.230 |
| 1342. | 6.390 | V1 | 1.221 | V2 | 1.221 | V3 | 1.221 | V4 | 1.221 | .000 | 1.221 | 1.221 | 1.219 |
| 1401. | 7.740 | V1 | 1.197 | V2 | 1.198 | V3 | 1.200 | V4 | 1.198 | .000 | 1.210 | 1.210 | 1.208 |
| 1409. | 8.470 | V1 | 1.169 | V2 | 1.176 | V3 | 1.176 | V4 | 1.176 | .000 | 1.197 | 1.200 | 1.194 |
| 1416. | 9.190 | V1 | 1.169 | V2 | 1.167 | V3 | 1.166 | V4 | 1.169 | .000 | 1.174 | 1.176 | 1.169 |
| 1423. | 9.920 | V1 | 1.169 | V2 | 1.162 | V3 | 1.162 | V4 | 1.163 | .000 | 1.168 | 1.170 | 1.162 |
| 1430. | 10.650 | V1 | 1.153 | V2 | 1.157 | V3 | 1.156 | V4 | 1.158 | .000 | 1.163 | 1.167 | 1.155 |
| 1437. | 11.370 | V1 | 1.146 | V2 | 1.146 | V3 | 1.147 | V4 | 1.148 | .000 | 1.157 | 1.162 | 1.142 |
| 1445. | 12.100 | V1 | 1.137 | V2 | 1.137 | V3 | 1.137 | V4 | 1.137 | .000 | 1.146 | 1.157 | 1.135 |
| 1452. | 12.820 | V1 | 1.109 | V2 | 1.110 | V3 | 1.112 | V4 | 1.124 | .000 | 1.129 | 1.147 | 1.089 |
| 1459. | 13.550 | V1 | 1.089 | V2 | 1.083 | V3 | 1.083 | V4 | 1.091 | .000 | 1.098 | 1.112 | 1.070 |
| 1506. | 14.280 | V1 | 1.059 | V2 | 1.063 | V3 | 1.062 | V4 | 1.073 | .000 | 1.074 | 1.083 | 1.053 |
| 1513. | 15.010 | V1 | 1.041 | V2 | 1.043 | V3 | 1.043 | V4 | 1.053 | .000 | 1.056 | 1.063 | 1.040 |
| 1520. | 15.740 | V1 | 1.025 | V2 | 1.029 | V3 | 1.028 | V4 | 1.041 | .000 | 1.039 | 1.045 | 1.025 |
| 1527. | 16.470 | V1 | 1.009 | V2 | 1.016 | V3 | 1.015 | V4 | 1.025 | .000 | 1.022 | 1.029 | 1.002 |
| 1534. | 17.200 | V1 | 1.000 | V2 | 1.007 | V3 | 1.007 | V4 | 1.011 | .000 | 1.007 | 1.016 | 1.000 |
| 1541. | 17.930 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1548. | 18.660 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1555. | 19.390 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1602. | 20.120 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1609. | 20.850 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1616. | 21.580 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1623. | 22.310 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1630. | 23.040 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1637. | 23.770 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1644. | 24.500 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1651. | 25.230 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1658. | 25.960 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1705. | 26.690 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1712. | 27.420 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1719. | 28.150 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1726. | 28.880 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1733. | 29.610 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1740. | 30.340 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1747. | 31.070 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1754. | 31.800 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1801. | 32.530 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1808. | 33.260 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1815. | 33.990 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1822. | 34.720 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1829. | 35.450 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1836. | 36.180 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1843. | 36.910 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1850. | 37.640 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1857. | 38.370 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1904. | 39.100 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1911. | 39.830 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1918. | 40.560 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1925. | 41.290 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1932. | 42.020 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1939. | 42.750 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1946. | 43.480 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 1953. | 44.210 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2000. | 44.940 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2007. | 45.670 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2014. | 46.400 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2021. | 47.130 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2028. | 47.860 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2035. | 48.590 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2042. | 49.320 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2049. | 50.050 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2056. | 50.780 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2103. | 51.510 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2110. | 52.240 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2117. | 52.970 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2124. | 53.700 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2131. | 54.430 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2138. | 55.160 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2145. | 55.890 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2152. | 56.620 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2159. | 57.350 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2206. | 58.080 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2213. | 58.810 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2220. | 59.540 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2227. | 60.270 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2234. | 61.000 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2241. | 61.730 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2248. | 62.460 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2255. | 63.190 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2302. | 63.920 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2309. | 64.650 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2316. | 65.380 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2323. | 66.110 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2330. | 66.840 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2337. | 67.570 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2344. | 68.300 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2351. | 69.030 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2358. | 69.760 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2405. | 70.490 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | 1.000 | 1.000 |
| 2412. | 71.220 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | .000 | 1.000 | | |

WQEC/C 134
PAGE IS 4.

ORIGINAL PAGE IS
OF POOR QUALITY

| DATE OF RUN | 15 08/27/76 | AVE-DIS | LOW-DIS | HIGH-CHAR | AVE-CHAR | LOW-CHAR | AHO | AHI |
|-------------|-------------|---------|---------|-----------|----------|----------|-------|--------|
| 2234 | 3. | 1.87 | 1.1 | 1.1 | 1.1 | 1.1 | 1.013 | 4.294 |
| 2234 | 10. | 1.71 | 1.1 | 1.1 | 1.1 | 1.1 | 1.726 | 5.000 |
| 2234 | 11. | 1.67 | 1.1 | 1.1 | 1.1 | 1.1 | 1.400 | 5.600 |
| 2234 | 13. | 1.60 | 1.1 | 1.1 | 1.1 | 1.1 | 1.100 | 6.244 |
| 2234 | 14. | 1.42 | 1.1 | 1.1 | 1.1 | 1.1 | 1.600 | 6.606 |
| 2234 | 17. | 1.36 | 1.1 | 1.1 | 1.1 | 1.1 | 1.184 | 7.927 |
| 2234 | 18. | 1.34 | 1.1 | 1.1 | 1.1 | 1.1 | 1.515 | 8.278 |
| 2234 | 19. | 1.33 | 1.1 | 1.1 | 1.1 | 1.1 | 1.865 | 8.749 |
| 2234 | 21. | 1.11 | 1.1 | 1.1 | 1.1 | 1.1 | 1.444 | 9.550 |
| 2234 | 22. | 1.29 | 1.1 | 1.1 | 1.1 | 1.1 | 1.783 | 10.000 |
| 2234 | 24. | 1.27 | 1.1 | 1.1 | 1.1 | 1.1 | 1.404 | 10.600 |
| 2234 | 25. | 1.21 | 1.1 | 1.1 | 1.1 | 1.1 | 1.797 | 10.700 |
| 2234 | 26. | 1.23 | 1.1 | 1.1 | 1.1 | 1.1 | 1.915 | 10.700 |
| 2234 | 27. | 1.24 | 1.1 | 1.1 | 1.1 | 1.1 | 1.917 | 10.700 |
| 2234 | 28. | 1.23 | 1.1 | 1.1 | 1.1 | 1.1 | 1.020 | 10.700 |
| 2234 | 30. | 1.23 | 1.1 | 1.1 | 1.1 | 1.1 | 1.116 | 10.700 |
| 2234 | 31. | 1.38 | 1.1 | 1.1 | 1.1 | 1.1 | 1.020 | 10.700 |
| 2234 | 33. | 1.11 | 1.1 | 1.1 | 1.1 | 1.1 | 1.053 | 10.700 |
| 2234 | 34. | 1.22 | 1.1 | 1.1 | 1.1 | 1.1 | 1.832 | 10.700 |
| 2234 | 35. | 1.55 | 1.1 | 1.1 | 1.1 | 1.1 | 1.413 | 10.700 |
| 2234 | 37. | 1.77 | 1.1 | 1.1 | 1.1 | 1.1 | 1.731 | 10.700 |
| 2234 | 38. | 1.40 | 1.1 | 1.1 | 1.1 | 1.1 | 1.200 | 10.700 |
| 2234 | 40. | 1.11 | 1.1 | 1.1 | 1.1 | 1.1 | 1.856 | 10.700 |
| 2234 | 41. | 1.58 | 1.1 | 1.1 | 1.1 | 1.1 | 1.409 | 10.700 |
| 2234 | 43. | 1.56 | 1.1 | 1.1 | 1.1 | 1.1 | 1.763 | 10.700 |
| 2234 | 44. | 1.55 | 1.1 | 1.1 | 1.1 | 1.1 | 1.580 | 10.700 |
| 2234 | 45. | 1.00 | 1.1 | 1.1 | 1.1 | 1.1 | 1.873 | 10.700 |
| 2234 | 47. | 1.67 | 1.1 | 1.1 | 1.1 | 1.1 | 1.792 | 10.700 |
| 2234 | 48. | 1.70 | 1.1 | 1.1 | 1.1 | 1.1 | 1.990 | 10.700 |
| 2234 | 50. | 1.87 | 1.1 | 1.1 | 1.1 | 1.1 | 1.309 | 10.700 |
| 2234 | 191. | 1.70 | 1.1 | 1.1 | 1.1 | 1.1 | 1.470 | 10.700 |
| 2234 | 192. | 1.67 | 1.1 | 1.1 | 1.1 | 1.1 | 1.465 | 10.700 |
| 2234 | 193. | 1.53 | 1.1 | 1.1 | 1.1 | 1.1 | 1.399 | 10.700 |
| 2234 | 196. | 1.40 | 1.1 | 1.1 | 1.1 | 1.1 | 1.324 | 10.700 |
| 2234 | 197. | 1.35 | 1.1 | 1.1 | 1.1 | 1.1 | 1.705 | 10.700 |
| 2234 | 198. | 1.31 | 1.1 | 1.1 | 1.1 | 1.1 | 1.424 | 10.700 |
| 2234 | 200. | 1.25 | 1.1 | 1.1 | 1.1 | 1.1 | 1.464 | 10.700 |
| 2234 | 201. | 1.20 | 1.1 | 1.1 | 1.1 | 1.1 | 1.465 | 10.700 |
| 2234 | 202. | 1.17 | 1.1 | 1.1 | 1.1 | 1.1 | 1.469 | 10.700 |
| 2234 | 204. | 1.13 | 1.1 | 1.1 | 1.1 | 1.1 | 1.470 | 10.700 |
| 2234 | 205. | 1.11 | 1.1 | 1.1 | 1.1 | 1.1 | 1.471 | 10.700 |
| 2234 | 206. | 1.09 | 1.1 | 1.1 | 1.1 | 1.1 | 1.473 | 10.700 |
| 2234 | 208. | 1.05 | 1.1 | 1.1 | 1.1 | 1.1 | 1.471 | 10.700 |
| 2234 | 209. | 1.05 | 1.1 | 1.1 | 1.1 | 1.1 | 1.470 | 10.700 |
| 2234 | 210. | 1.05 | 1.1 | 1.1 | 1.1 | 1.1 | 1.477 | 10.700 |
| 2234 | 212. | 1.02 | 1.1 | 1.1 | 1.1 | 1.1 | 1.480 | 10.700 |
| 2234 | 213. | 1.00 | 1.1 | 1.1 | 1.1 | 1.1 | 1.477 | 10.700 |
| 2234 | 214. | 1.00 | 1.1 | 1.1 | 1.1 | 1.1 | 1.476 | 10.700 |
| 2234 | 216. | 1.14 | 1.1 | 1.1 | 1.1 | 1.1 | 1.479 | 10.700 |
| 2234 | 217. | 1.22 | 1.1 | 1.1 | 1.1 | 1.1 | 1.478 | 10.700 |
| 2234 | 219. | 1.09 | 1.1 | 1.1 | 1.1 | 1.1 | 1.429 | 10.700 |
| 2234 | 220. | 1.09 | 1.1 | 1.1 | 1.1 | 1.1 | 1.121 | 10.700 |
| 2234 | 221. | 1.09 | 1.1 | 1.1 | 1.1 | 1.1 | 1.378 | 10.700 |
| 2234 | 223. | 1.09 | 1.1 | 1.1 | 1.1 | 1.1 | 1.467 | 10.700 |
| 2234 | 224. | 1.09 | 1.1 | 1.1 | 1.1 | 1.1 | 1.474 | 10.700 |
| 2234 | 226. | 1.09 | 1.1 | 1.1 | 1.1 | 1.1 | 1.473 | 10.700 |
| 2234 | 227. | 1.09 | 1.1 | 1.1 | 1.1 | 1.1 | 1.470 | 10.700 |
| 2234 | 229. | 1.09 | 1.1 | 1.1 | 1.1 | 1.1 | 1.470 | 10.700 |
| 2234 | 230. | 1.09 | 1.1 | 1.1 | 1.1 | 1.1 | 1.470 | 10.700 |

WQEC/C 77-134

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WQEC/C 77-134

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HIGH-CHAR
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LOW-DIS
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AVE-DIS
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| DATE OF RUN | IS 08/27/76 | AVE-DIS | LOW-DIS | HIGH-CHAR | AVE-CHAR | LOW-CHAR | AHO | AHI |
|-------------|-------------|---------|---------|-----------|----------|----------|-------|--------|
| 223A | 737. | 1.260 | 1.255 | 1.554 | 1.496 | 1.438 | 1.630 | 5.300 |
| 223A | 736. | 1.249 | 1.246 | 1.554 | 1.496 | 1.446 | 2.420 | 6.370 |
| 223A | 739. | 1.241 | 1.238 | 1.552 | 1.496 | 1.447 | 3.140 | 7.470 |
| 223A | 741. | 1.228 | 1.226 | 1.547 | 1.496 | 1.451 | 4.110 | 8.520 |
| 223A | 742. | 1.224 | 1.219 | 1.547 | 1.496 | 1.450 | 4.600 | 9.170 |
| 223A | 743. | 1.220 | 1.215 | 1.546 | 1.496 | 1.449 | 4.840 | 9.670 |
| 223A | 744. | 1.217 | 1.211 | 1.540 | 1.496 | 1.445 | 5.080 | 9.530 |
| 223A | 745. | 1.214 | 1.208 | 1.527 | 1.496 | 1.447 | 5.320 | 9.600 |
| 223A | 747. | 1.209 | 1.203 | 1.542 | 1.496 | 1.437 | 5.560 | 9.710 |
| 223A | 749. | 1.206 | 1.199 | 1.541 | 1.489 | 1.444 | 6.050 | 9.600 |
| 223A | 750. | 1.203 | 1.197 | 1.530 | 1.496 | 1.458 | 6.290 | 9.580 |
| 223A | 751. | 1.201 | 1.195 | 1.539 | 1.496 | 1.452 | 6.530 | 9.520 |
| 223A | 752. | 1.198 | 1.193 | 1.541 | 1.496 | 1.449 | 6.530 | 9.700 |
| 223A | 754. | 1.200 | 1.192 | 1.541 | 1.496 | 1.444 | 6.770 | 10.000 |
| 223A | 755. | 1.198 | 1.191 | 1.538 | 1.496 | 1.437 | 7.010 | 10.090 |
| 223A | 756. | 1.198 | 1.191 | 1.536 | 1.496 | 1.434 | 7.020 | 9.580 |
| 223A | 759. | 1.215 | 1.213 | 1.520 | 1.493 | 1.470 | 7.260 | 8.130 |
| 223A | 761. | 1.217 | 1.214 | 1.503 | 1.496 | 1.477 | 7.200 | 8.231 |
| 223A | 763. | 1.204 | 1.199 | 1.520 | 1.495 | 1.454 | 6.778 | 9.301 |
| 223A | 764. | 1.204 | 1.198 | 1.525 | 1.495 | 1.438 | 6.776 | 8.877 |
| 223A | 766. | 1.203 | 1.200 | 1.527 | 1.495 | 1.433 | 6.536 | 8.475 |
| 223A | 768. | 1.211 | 1.206 | 1.518 | 1.493 | 1.449 | 6.056 | 8.300 |
| 223A | 769. | 1.214 | 1.209 | 1.528 | 1.494 | 1.433 | 5.809 | 8.266 |
| 223A | 770. | 1.216 | 1.212 | 1.527 | 1.492 | 1.416 | 5.590 | 8.141 |
| 223A | 771. | 1.216 | 1.214 | 1.528 | 1.493 | 1.415 | 5.341 | 7.162 |
| 223A | 772. | 1.219 | 1.217 | 1.530 | 1.494 | 1.414 | 5.089 | 6.911 |
| 223A | 773. | 1.222 | 1.220 | 1.529 | 1.493 | 1.411 | 4.853 | 6.238 |
| 223A | 774. | 1.230 | 1.225 | 1.529 | 1.493 | 1.411 | 4.604 | 6.238 |
| 223A | 775. | 1.230 | 1.222 | 1.529 | 1.493 | 1.410 | 4.130 | 6.736 |
| 223A | 776. | 1.242 | 1.238 | 1.530 | 1.495 | 1.412 | 3.638 | 6.600 |
| 223A | 1095. | 1.236 | 1.232 | 1.532 | 1.494 | 1.456 | 1.200 | 5.740 |
| 223A | 1096. | 1.236 | 1.233 | 1.533 | 1.494 | 1.455 | 2.490 | 5.340 |
| 223A | 1097. | 1.225 | 1.222 | 1.533 | 1.494 | 1.457 | 3.240 | 4.400 |
| 223A | 1100. | 1.218 | 1.214 | 1.537 | 1.497 | 1.450 | 3.600 | 4.940 |
| 223A | 1102. | 1.213 | 1.210 | 1.537 | 1.494 | 1.450 | 4.050 | 4.840 |
| 223A | 1103. | 1.205 | 1.200 | 1.537 | 1.493 | 1.445 | 4.400 | 4.500 |
| 223A | 1104. | 1.205 | 1.191 | 1.537 | 1.495 | 1.443 | 5.660 | 4.380 |
| 223A | 1105. | 1.205 | 1.189 | 1.548 | 1.495 | 1.440 | 5.200 | 4.740 |
| 223A | 1106. | 1.202 | 1.189 | 1.546 | 1.494 | 1.440 | 6.390 | 4.920 |
| 223A | 1107. | 1.188 | 1.185 | 1.544 | 1.493 | 1.440 | 6.800 | 4.990 |
| 223A | 1109. | 1.189 | 1.181 | 1.544 | 1.493 | 1.440 | 7.000 | 4.990 |
| 223A | 1111. | 1.189 | 1.180 | 1.544 | 1.493 | 1.440 | 7.000 | 4.300 |
| 223A | 1112. | 1.189 | 1.181 | 1.544 | 1.493 | 1.429 | 7.140 | 4.290 |
| 223A | 1113. | 1.186 | 1.182 | 1.549 | 1.495 | 1.428 | 7.130 | 4.300 |
| 223A | 1114. | 1.190 | 1.187 | 1.549 | 1.495 | 1.427 | 7.150 | 4.300 |
| 223A | 1116. | 1.209 | 1.206 | 1.509 | 1.495 | 1.486 | 7.200 | 4.940 |
| 223A | 1117. | 1.208 | 1.202 | 1.508 | 1.495 | 1.478 | 7.200 | 4.530 |
| 223A | 1118. | 1.207 | 1.201 | 1.505 | 1.494 | 1.471 | 7.140 | 4.370 |
| 223A | 1120. | 1.206 | 1.199 | 1.511 | 1.495 | 1.473 | 6.890 | 4.000 |
| 223A | 1121. | 1.202 | 1.197 | 1.507 | 1.495 | 1.459 | 6.890 | 4.400 |
| 223A | 1124. | 1.203 | 1.201 | 1.509 | 1.495 | 1.456 | 6.390 | 4.260 |
| 223A | 1125. | 1.206 | 1.203 | 1.509 | 1.495 | 1.456 | 6.150 | 4.740 |
| 223A | 1126. | 1.209 | 1.206 | 1.510 | 1.495 | 1.454 | 5.910 | 4.750 |
| 223A | 1127. | 1.214 | 1.211 | 1.510 | 1.495 | 1.452 | 5.420 | 4.360 |
| 223A | 1128. | 1.217 | 1.213 | 1.511 | 1.495 | 1.450 | 5.410 | 4.080 |
| 223A | 1129. | 1.214 | 1.216 | 1.514 | 1.495 | 1.447 | 5.160 | 4.780 |
| 223A | 1130. | 1.222 | 1.217 | 1.518 | 1.495 | 1.437 | 4.920 | 8.670 |
| 223A | 1248. | 1.246 | 1.243 | 1.519 | 1.495 | 1.435 | 3.190 | 7.980 |
| 223A | 1355. | 1.258 | 1.255 | 1.522 | 1.495 | 1.436 | 2.460 | 4.660 |

WQEC/C 77-134

| AVL-CHAR | LOW-CHAR | HIGH-CHAR | AVL-CHAR | LOW-CHAR | AVL-CHAR | LOW-CHAR | AVL-CHAR | LOW-CHAR |
|----------|----------|-----------|----------|----------|----------|----------|----------|----------|
| 1.260 | 1.260 | 1.259 | 1.455 | 1.439 | 1.540 | 1.540 | 6.110 | |
| 1.261 | 1.261 | 1.258 | 1.455 | 1.470 | 1.538 | 1.538 | 6.550 | |
| 1.262 | 1.262 | 1.239 | 1.455 | 1.470 | 1.538 | 1.538 | 6.550 | |
| 1.263 | 1.263 | 1.218 | 1.455 | 1.465 | 1.538 | 1.538 | 6.550 | |
| 1.264 | 1.264 | 1.215 | 1.455 | 1.463 | 1.538 | 1.538 | 6.550 | |
| 1.265 | 1.265 | 1.208 | 1.455 | 1.452 | 1.538 | 1.538 | 6.550 | |
| 1.266 | 1.266 | 1.204 | 1.455 | 1.447 | 1.538 | 1.538 | 6.550 | |
| 1.267 | 1.267 | 1.202 | 1.455 | 1.439 | 1.538 | 1.538 | 6.550 | |
| 1.268 | 1.268 | 1.199 | 1.455 | 1.435 | 1.538 | 1.538 | 6.550 | |
| 1.269 | 1.269 | 1.192 | 1.455 | 1.431 | 1.538 | 1.538 | 6.550 | |
| 1.270 | 1.270 | 1.188 | 1.455 | 1.429 | 1.538 | 1.538 | 6.550 | |
| 1.271 | 1.271 | 1.189 | 1.455 | 1.431 | 1.538 | 1.538 | 6.550 | |
| 1.272 | 1.272 | 1.184 | 1.455 | 1.429 | 1.538 | 1.538 | 6.550 | |
| 1.273 | 1.273 | 1.186 | 1.455 | 1.432 | 1.538 | 1.538 | 6.550 | |
| 1.274 | 1.274 | 1.181 | 1.455 | 1.430 | 1.538 | 1.538 | 6.550 | |
| 1.275 | 1.275 | 1.180 | 1.455 | 1.430 | 1.538 | 1.538 | 6.550 | |
| 1.276 | 1.276 | 1.178 | 1.455 | 1.431 | 1.538 | 1.538 | 6.550 | |
| 1.277 | 1.277 | 1.203 | 1.455 | 1.473 | 1.538 | 1.538 | 6.550 | |
| 1.278 | 1.278 | 1.202 | 1.455 | 1.473 | 1.538 | 1.538 | 6.550 | |
| 1.279 | 1.279 | 1.199 | 1.455 | 1.470 | 1.538 | 1.538 | 6.550 | |
| 1.280 | 1.280 | 1.196 | 1.455 | 1.468 | 1.538 | 1.538 | 6.550 | |
| 1.281 | 1.281 | 1.194 | 1.455 | 1.471 | 1.538 | 1.538 | 6.550 | |
| 1.282 | 1.282 | 1.198 | 1.455 | 1.464 | 1.538 | 1.538 | 6.550 | |
| 1.283 | 1.283 | 1.199 | 1.455 | 1.463 | 1.538 | 1.538 | 6.550 | |
| 1.284 | 1.284 | 1.208 | 1.455 | 1.463 | 1.538 | 1.538 | 6.550 | |
| 1.285 | 1.285 | 1.210 | 1.455 | 1.461 | 1.538 | 1.538 | 6.550 | |
| 1.286 | 1.286 | 1.212 | 1.455 | 1.461 | 1.538 | 1.538 | 6.550 | |
| 1.287 | 1.287 | 1.215 | 1.455 | 1.458 | 1.538 | 1.538 | 6.550 | |
| 1.288 | 1.288 | 1.218 | 1.455 | 1.451 | 1.538 | 1.538 | 6.550 | |
| 1.289 | 1.289 | 1.235 | 1.455 | 1.452 | 1.538 | 1.538 | 6.550 | |
| 1.290 | 1.290 | 1.258 | 1.455 | 1.454 | 1.538 | 1.538 | 6.550 | |
| 1.291 | 1.291 | 1.271 | 1.455 | 1.467 | 1.538 | 1.538 | 6.550 | |
| 1.292 | 1.292 | 1.245 | 1.455 | 1.463 | 1.538 | 1.538 | 6.550 | |
| 1.293 | 1.293 | 1.217 | 1.455 | 1.460 | 1.538 | 1.538 | 6.550 | |
| 1.294 | 1.294 | 1.195 | 1.455 | 1.456 | 1.538 | 1.538 | 6.550 | |
| 1.295 | 1.295 | 1.198 | 1.455 | 1.442 | 1.538 | 1.538 | 6.550 | |
| 1.296 | 1.296 | 1.192 | 1.455 | 1.446 | 1.538 | 1.538 | 6.550 | |
| 1.297 | 1.297 | 1.190 | 1.455 | 1.445 | 1.538 | 1.538 | 6.550 | |
| 1.298 | 1.298 | 1.188 | 1.455 | 1.438 | 1.538 | 1.538 | 6.550 | |
| 1.299 | 1.299 | 1.187 | 1.455 | 1.467 | 1.538 | 1.538 | 6.550 | |
| 1.300 | 1.300 | 1.183 | 1.455 | 1.461 | 1.538 | 1.538 | 6.550 | |
| 1.301 | 1.301 | 1.186 | 1.455 | 1.451 | 1.538 | 1.538 | 6.550 | |
| 1.302 | 1.302 | 1.190 | 1.455 | 1.453 | 1.538 | 1.538 | 6.550 | |
| 1.303 | 1.303 | 1.186 | 1.455 | 1.449 | 1.538 | 1.538 | 6.550 | |
| 1.304 | 1.304 | 1.183 | 1.455 | 1.462 | 1.538 | 1.538 | 6.550 | |
| 1.305 | 1.305 | 1.181 | 1.455 | 1.459 | 1.538 | 1.538 | 6.550 | |
| 1.306 | 1.306 | 1.174 | 1.455 | 1.467 | 1.538 | 1.538 | 6.55 | |

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S 07/19776
CURRENT

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| DATE | OF RUN | IS 07/19/76 |
|------|--------|-------------|
| PACK | DAY | CURRENT |
| 223A | 1124. | .285 |
| 223A | 1125. | .277 |
| 223A | 1126. | .277 |
| 223A | 1127. | .277 |
| 223A | 1128. | .270 |
| 223A | 1129. | .262 |
| 223A | 1130. | .255 |
| 223A | 1131. | .210 |
| 223A | 1132. | .188 |
| 223A | 1133. | .165 |
| 223A | 1292. | .620 |
| 223A | 1293. | .600 |
| 223A | 1294. | .500 |
| 223A | 1295. | .440 |
| 223A | 1297. | .310 |
| 223A | 1298. | .300 |
| 223A | 1299. | .280 |
| 223A | 1301. | .240 |
| 223A | 1303. | .250 |
| 223A | 1304. | .260 |
| 223A | 1305. | .270 |
| 223A | 1307. | .260 |
| 223A | 1308. | .250 |
| 223A | 1309. | .250 |
| 223A | 1311. | .260 |
| 223A | 1314. | .330 |
| 223A | 1315. | .340 |
| 223A | 1317. | .360 |
| 223A | 1318. | .350 |
| 223A | 1319. | .340 |
| 223A | 1320. | .340 |
| 223A | 1322. | .350 |
| 223A | 1323. | .340 |
| 223A | 1324. | .330 |
| 223A | 1325. | .320 |
| 223A | 1327. | .320 |
| 223A | 1328. | .300 |
| 223A | 1330. | .290 |
| 223A | 1332. | .290 |
| 223A | 1333. | .230 |
| 223A | 1333. | .352 |
| 223A | 1371. | .375 |
| 223A | 1372. | .337 |
| 223A | 1373. | .307 |
| 223A | 1374. | .290 |
| 223A | 1375. | .280 |
| 223A | 1377. | .269 |
| 223A | 1378. | .269 |
| 223A | 1379. | .330 |
| 223A | 1382. | .332 |
| 223A | 1383. | .332 |

IF RUN IS 07/19/76
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WQEC/C 77-134

| DATE OF RUN | 15.08/27.76 | AVE-DIS | LOW-DIS | HIGH-CHAR | AVE-CHAR | LOW-CHAR | AHO | AHI |
|-------------|-------------|----------|-----------|-----------|-----------|----------|-------|--------|
| PACK | DAY | HIGH-DIS | | | | | | |
| 223A | 1753. | 1.246 | 1.245 | 1.244 | 1.494 | 1.448 | 1.331 | 11.970 |
| 223A | 1754. | 1.232 | 1.229 | 1.223 | 1.494 | 1.450 | 2.427 | 12.500 |
| 223A | 1755. | 1.221 | 1.218 | 1.214 | 1.494 | 1.461 | 3.158 | 14.170 |
| 223A | 1757. | 1.209 | 1.207 | 1.203 | 1.494 | 1.471 | 4.131 | 13.590 |
| 223A | 1759. | 1.199 | 1.196 | 1.196 | 1.494 | 1.451 | 4.859 | 12.430 |
| 223A | 1761. | 1.196 | 1.193 | 1.190 | 1.495 | 1.449 | 5.346 | 11.510 |
| 223A | 1762. | 1.194 | 1.191 | 1.188 | 1.494 | 1.444 | 5.890 | 11.600 |
| 223A | 1763. | 1.197 | 1.195 | 1.191 | 1.495 | 1.431 | 5.830 | 11.400 |
| 223A | 1764. | 1.197 | 1.195 | 1.191 | 1.495 | 1.428 | 6.073 | 11.480 |
| 223A | 1766. | 1.197 | 1.194 | 1.191 | 1.496 | 1.434 | 6.559 | 12.060 |
| 223A | 1767. | 1.195 | 1.192 | 1.189 | 1.496 | 1.444 | 6.679 | 12.000 |
| 223A | 1768. | 1.194 | 1.192 | 1.188 | 1.496 | 1.435 | 6.804 | 12.920 |
| 223A | 1770. | 1.187 | 1.184 | 1.180 | 1.495 | 1.445 | 7.047 | 12.110 |
| 223A | 1771. | 1.190 | 1.187 | 1.184 | 1.495 | 1.438 | 7.047 | 11.700 |
| 223A | 1772. | 1.204 | 1.202 | 1.198 | 1.495 | 1.434 | 7.290 | 11.580 |
| 223A | 1775. | 1.200 | 1.196 | 1.193 | 1.495 | 1.470 | 7.290 | 11.740 |
| 223A | 1777. | 1.198 | 1.195 | 1.191 | 1.495 | 1.464 | 7.290 | 12.500 |
| 223A | 1778. | 1.198 | 1.195 | 1.190 | 1.495 | 1.456 | 7.047 | 12.120 |
| 223A | 1779. | 1.198 | 1.194 | 1.189 | 1.495 | 1.454 | 6.804 | 12.100 |
| 223A | 1781. | 1.198 | 1.195 | 1.190 | 1.495 | 1.453 | 6.797 | 12.050 |
| 223A | 1782. | 1.200 | 1.198 | 1.193 | 1.496 | 1.454 | 6.559 | 11.700 |
| 223A | 1783. | 1.202 | 1.200 | 1.196 | 1.496 | 1.448 | 6.312 | 11.410 |
| 223A | 1785. | 1.208 | 1.206 | 1.201 | 1.496 | 1.449 | 6.069 | 11.190 |
| 223A | 1786. | 1.210 | 1.208 | 1.205 | 1.496 | 1.446 | 5.581 | 10.700 |
| 223A | 1788. | 1.211 | 1.208 | 1.205 | 1.491 | 1.440 | 5.344 | 10.470 |
| 223A | 1789. | 1.218 | 1.216 | 1.212 | 1.495 | 1.433 | 4.860 | 8.920 |
| 223A | 1792. | 1.240 | 1.232 | 1.229 | 1.496 | 1.434 | 4.600 | 8.320 |
| 223A | 1793. | 1.260 | 1.251 | 1.240 | 1.496 | 1.436 | 4.400 | 7.410 |
| 223A | 1794. | 1.273 | 1.273 | 1.271 | 1.495 | 1.439 | 2.280 | 7.030 |
| 1 | 00738 | 1.55000 | 113.00000 | 1.18000 | 159.70000 | 1.450 | 6.490 | |
| 2 | 22951 | 14.50000 | 8.31000 | 1.33100 | 146.70000 | | | |

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F. GU 15.0 ah (ATS 6)

1. Pack 226A, 5-cells

a. Cell information:

(1) The cells were purchased by Fairchild Industries under contract NAS-5-21100 for NASA, GSFC. The cells have the following manufacturing properties:

- (a) Number of plates: 10 negative and 9 positive
- (b) Average plate thickness: 38 mils (negative and positive plates)
- (c) Separator: non-woven nylon, Pellon 2505
- (d) Free volume: 45 cubic centimeters
- (e) Precharge: 1.0 ampere-hour
- (f) Negative/positive ratio specified: 1.40
- (g) Excess negative: 6.0 ampere-hour, minimum
- (h) Electrolyte: 43 cubic centimeters, 31%KOH

(2) Performance of these cells were presented at the 1975 GSFC Battery Workshop and the proceedings are contained in GSFC's Report X-711-76-21 of November 1975.

(3) These cells are considered as engineering cells and were activated in January 1972. They received acceptance tests at GSFC, 19.9 ah (25°C) and 15.8 ah (0°C), before being placed on a synchronous orbit test regime at GSFC.

(4) The cells completed their first 2 eclipse seasons at GSFC. The cells were fitted with pressure transducers prior to testing at NAVPNSUPPCEN Crane.

b. Parameters:

| | | | |
|--------------------------|------|----------------------|-------|
| Depth of Discharge (%) | 50 | Voltage Limit (v/c) | 1.410 |
| Charge Control | VL | Temperature (°C) | 20 |
| Charge Current (amps) | 1.50 | Float Voltage (v/c)* | 1.410 |
| Discharge Current (amps) | 6.25 | | |

*--Following shadow period 5, pack was placed on float with a voltage limit, was previously constant current.

LOAD MODE TEST--One discharge (50% DOD at the 1.87 ampere rate) per day. Recharge at 1.5 ampere to an average voltage per cell of 1.410 volts.

c. Capacity checks:

(1) Precycling and Shadow: (Discharge to .75 volts any cell or to an average of 1.00 volts per cell, whichever occurs first).

| | Cell
1 | Cell
2 | Cell
3 | Cell
4 | Cell
5 | ah
out |
|---------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Precycling (Figure 185)** | 18.72 | 19.22 | 18.72 | 18.20 | 18.72 | |
| Shadow 3 | 1.030 | 1.055 | .667 | 1.010 | 1.070 | 20.42 |
| Shadow 4 (Figure 186) | .998 | 1.001 | .982 | 1.002 | 1.013 | 18.10 |
| Shadow 5 (Figure 187) | .991 | .990 | .988 | 1.004 | 1.008 | 18.79 |
| Shadow 6 (Figure 188) | .996 | .994 | .992 | 1.007 | 1.009 | 18.50 |
| Shadow 7 (Figure 189) | .990 | .993 | .999 | .998 | 1.001 | 18.83 |
| Shadow 8 (Figure 190) | .992 | .997 | .998 | .999 | 1.002 | 17.57 |

**--Precycling prior to shadow 3.

d. Test results during Eclipse Seasons and Load Mode Test: (Figures 191 to 196)

(1) End of Discharge Voltages: Effect of the reconditioning of the pack, due to the capacity check, can be seen for each season. The effect become more pronounced in the seasons following the Load Mode Test, which followed season 3.

(2) The pack was placed on a Load Mode Test during the sun period following eclipse season 3. The pack completed 94 cycles (50% DOD-4 hours, 24 hour orbit) during this period. The pack was placed on float for 1 week prior to and following this test.

(3) End of Charge Voltages and Ampere-Hours In: a variation of one millivolt, in the average end of charge voltage, causes a change in the ampere-hours in of approximately 1 ampere-hour.

(4) Pressure at End of Charge: The average end of charge pressure was 8 psia during shadow 3. This steadily decreased to 0 psia during shadow 8. During, float 4, three of the five pressure transducers (on cells 1, 3 and 5) were damaged by a power surge during an electrical storm.

e. Performance during Sun Periods: The pack has completed 8 sun periods at NAVWPNSUPPCEN Crane as it began test with an eclipse season. Sun period numbers refer to the period following that shadow period with the same numbers. Following shadow 3 the pack was placed on float (.25 amperes) for one week prior to the start of the Load Mode Test. Following this test the pack was placed on float (.25 amperes) for one week prior to the start of shadow 4. The pack was placed on a .25 ampere constant-current charge during sun period 4; but starting with period 5, the pack has been floated at its voltage limit of 1.410 volts per cell average. The pressures have not exceeded 5 psia during any sun periods. Following is a listing of the high, average and low cell voltages and current (amps) at the start and end of each sun period.

SUN PERIODS

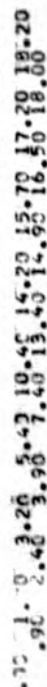
| | 3 | | 4 | | 5 | | 6 | |
|--------------------|----------|----------|----------|------------|------------|----------|----------|----------|
| | Start | End | Start | End | Start | End | Start | End |
| <u>Voltages***</u> | | | | | | | | |
| High | 1.384(5) | 1.393(3) | 1.387(5) | 1.404(1,3) | 1.413(5) | 1.413(4) | 1.411(3) | 1.415(5) |
| Average | 1.383 | 1.392 | 1.386 | 1.403 | 1.410 | 1.409 | 1.410 | 1.410 |
| Low | 1.382(3) | 1.391(4) | 1.385(3) | 1.402(5) | 1.409(2,4) | 1.406(2) | 1.409(2) | 1.408(2) |
| Current | .25 | .25 | .25 | .25 | .51 | .47 | .58 | .38 |
| | 7 | | 8 | | | | | |
| | Start | End | Start | End | | | | |
| <u>Voltages</u> | | | | | | | | |
| High | 1.412(3) | 1.415(3) | 1.412(3) | 1.421(4,5) | | | | |
| Average | 1.411 | 1.412 | 1.410 | 1.417 | | | | |
| Low | 1.410(2) | 1.410(1) | 1.409(2) | 1.412(2) | | | | |
| Current | .66 | .40 | .51 | .42 | | | | |

***--() indicates which cell.

PAC< NUMBER IS 220A
PRF-CYCLING
CYCLE NUMBER IS
DISCHARGE RATE IS 6.25.

WDEC/C 77-134

AMPERE HOUR OUT

[illegible]

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| CELLS INCLUDED | TIME IN MINUTES | | | | |
|----------------|-----------------|----|----|----|----|
| | V1 | V2 | V3 | V4 | V5 |
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |
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| 97 | | | | | |
| 98 | | | | | |
| 99 | | | | | |
| 100 | | | | | |

MQEC/C 77-134

KEY
 * HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 226A
 SHADOW PERIOD IS 4
 CYCLE NUMBER IS 159
 DISCHARGE RATE IS 6.25

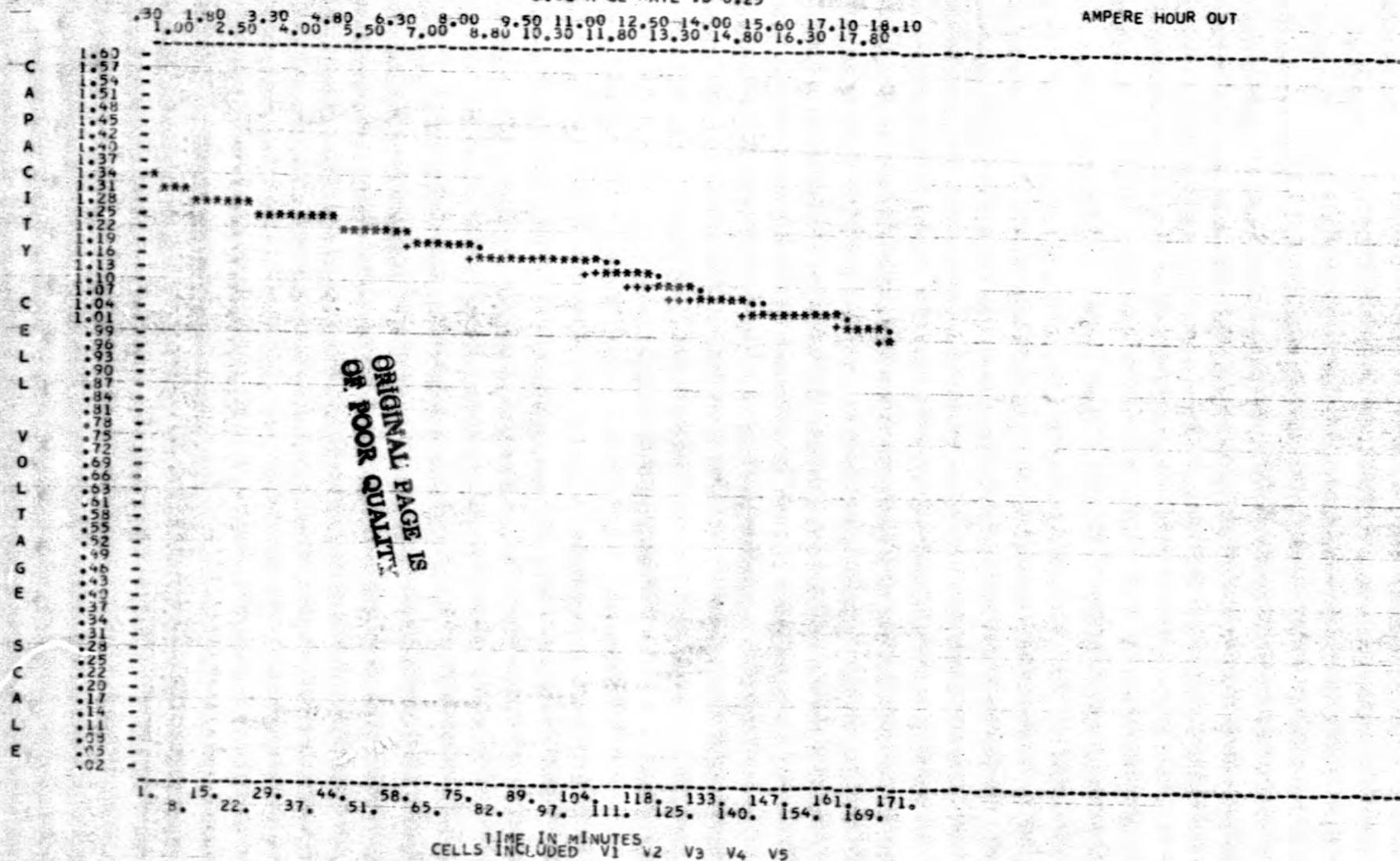


FIGURE 186

KEY
 * HIGH CELL
 * LOW CELL
 * AVERAGE

PACK NUMBER IS 226A
 SHADOW PERIOD IS 5
 CYCLE NUMBER IS 450
 DISCHARGE RATE IS 6.25

AMPERE HOUR OUT

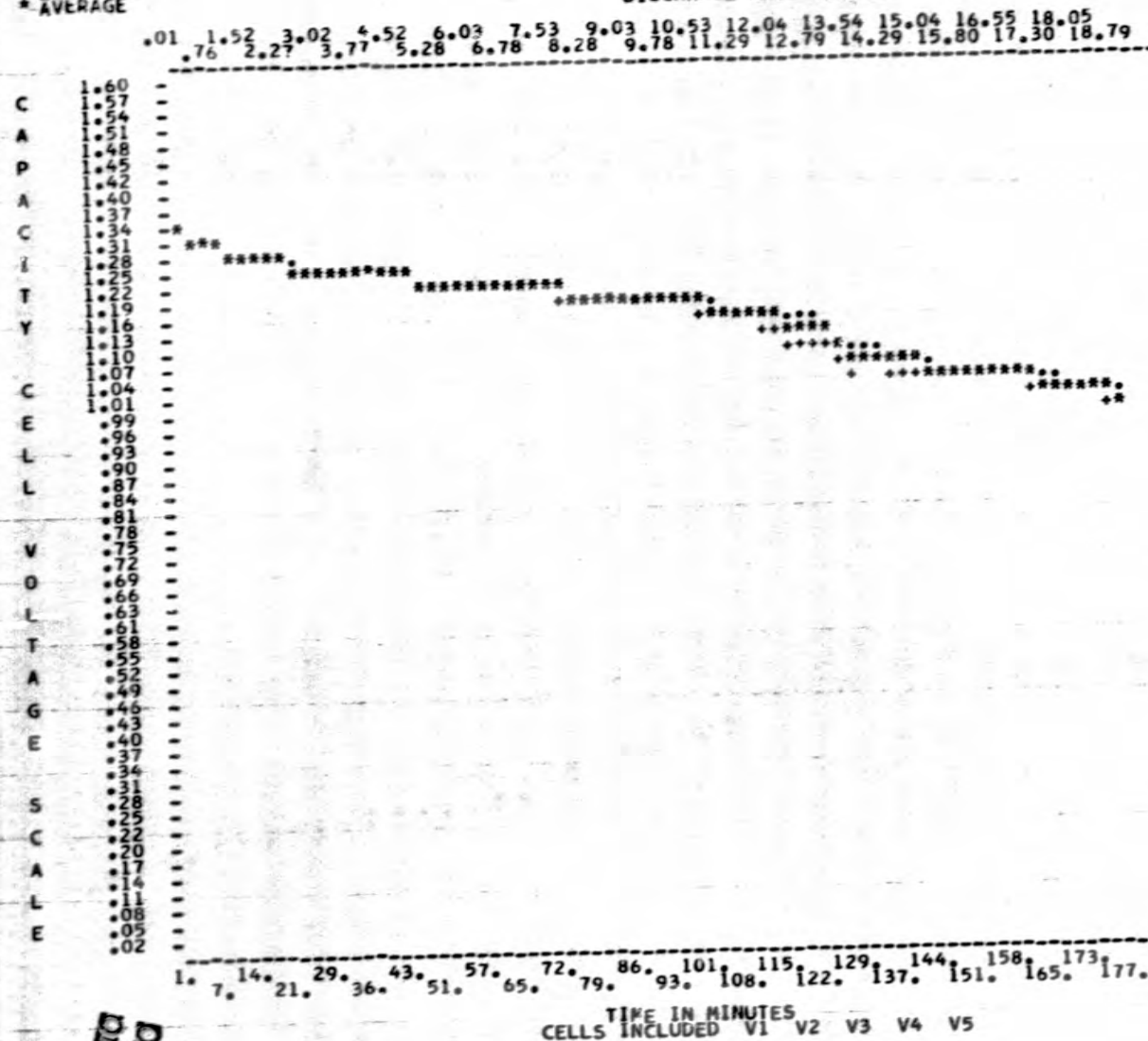


FIGURE 187

KEY
 * HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER 15 226A
 SHADOW PERIOD 15 6
 CYCLE NUMBER 15 646
 DISCHARGE RATE 15 6.25

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AMPERE HOUR OUT

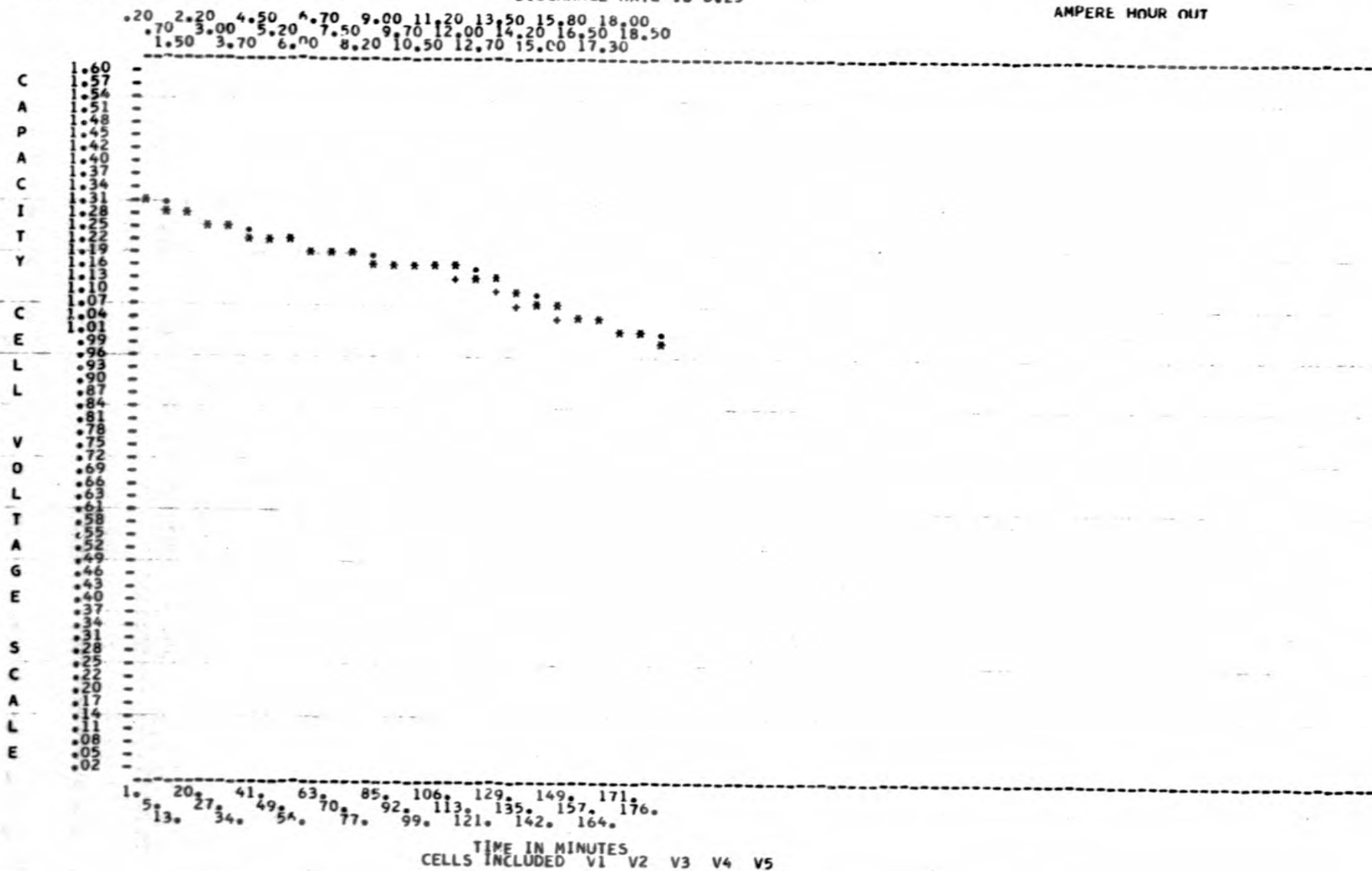


FIGURE 188

KEY
 * HIGH CELL
 + LOW CELL
 . AVERAGE

PACK NUMBER 15 226A
 SHADOW PERIOD 15 7
 CYCLE NUMBER 15 926.
 DISCHARGE RATE IS 6.25

AMPERE HOUR OUT

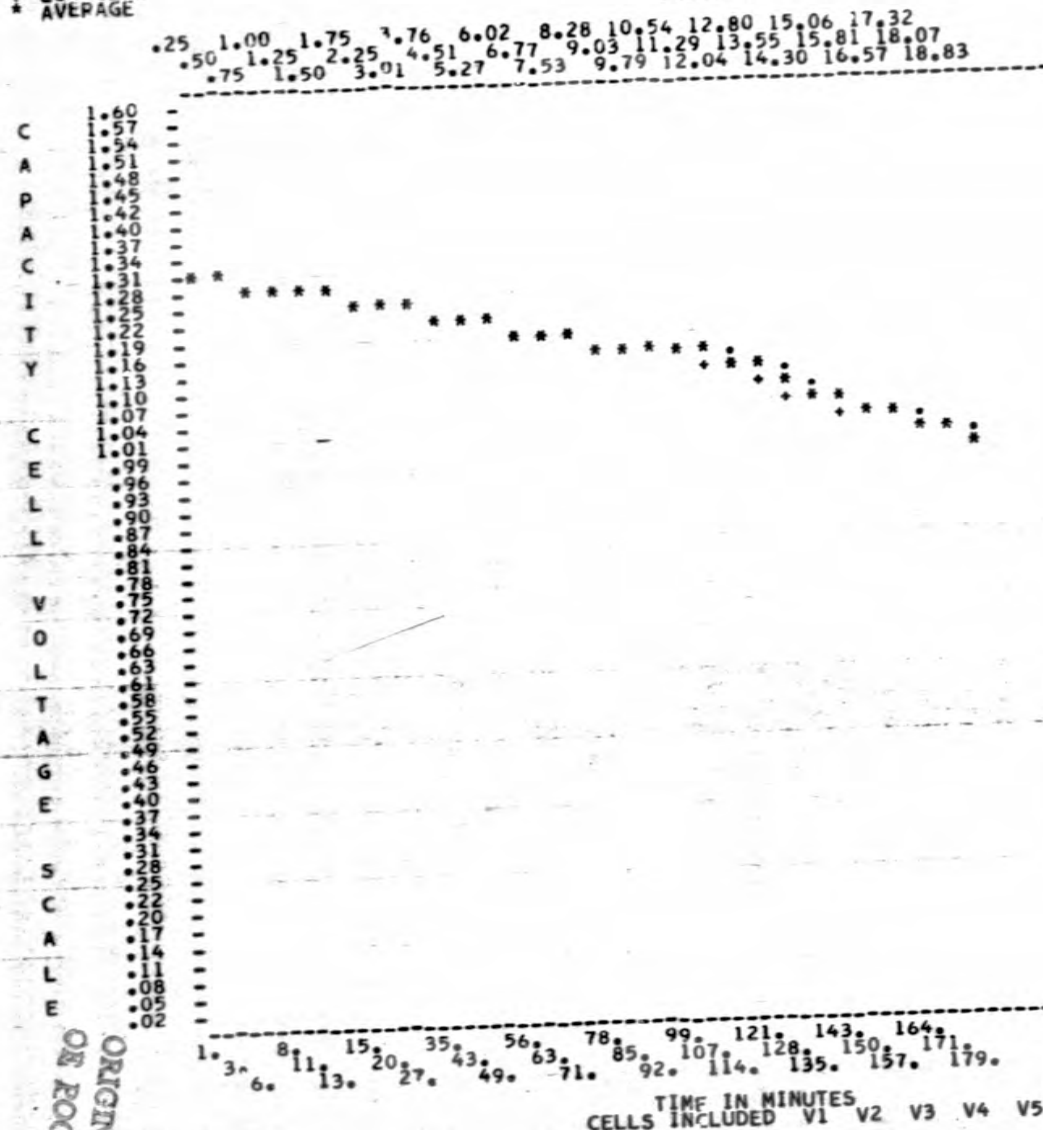


FIGURE 189

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KEY
 • HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 226A
 SHADOW PERIOD IS 8
 CYCLE NUMBER IS 1108
 DISCHARGE RATE IS 6.25

WQEC/C 77-134

AMPERE HOUR OUT

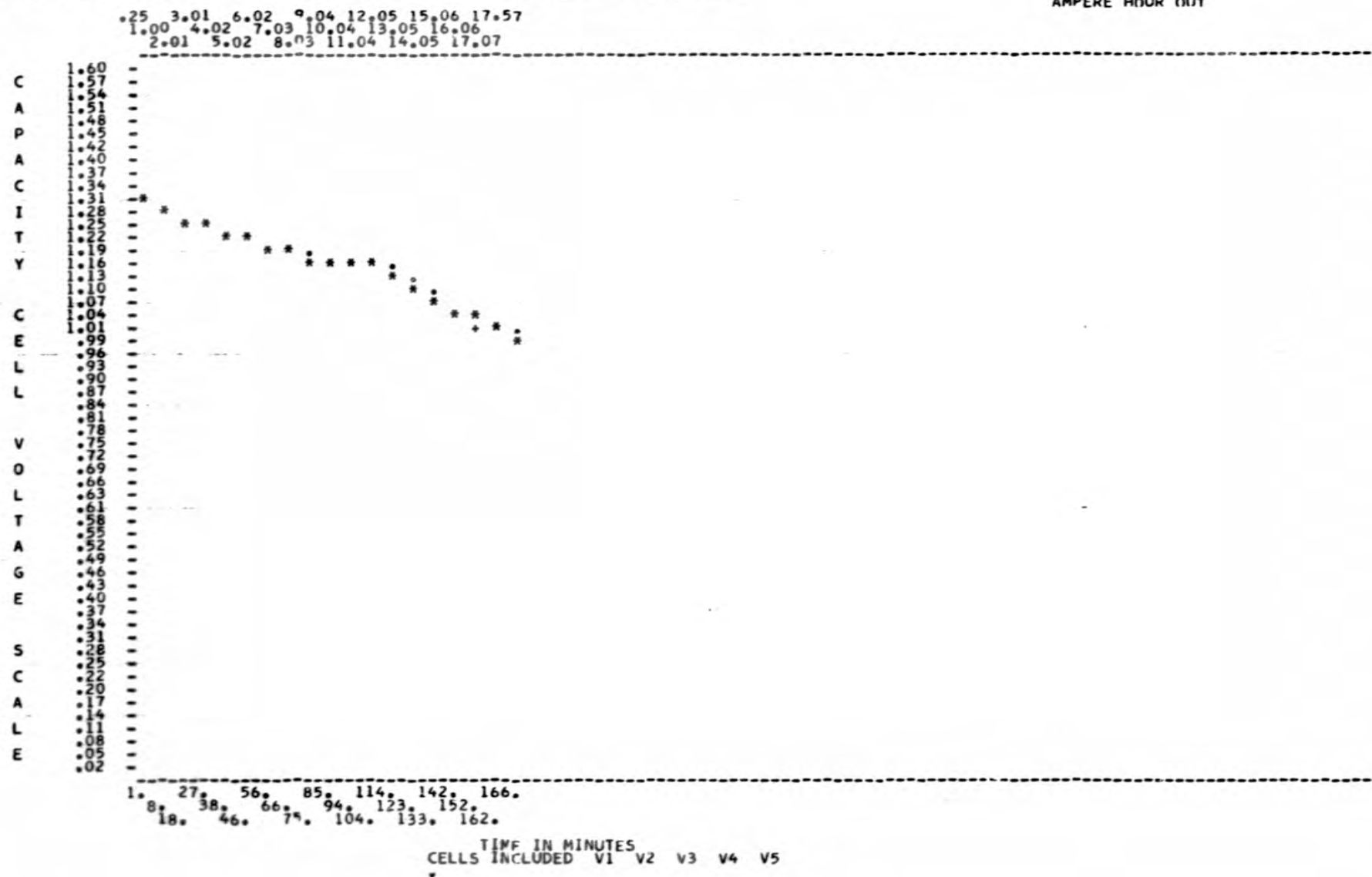


FIGURE 190

WQEC/C 77-134

DEPTH DISCHARGE 50
TEMPERATURE 20
AMPERE RATE 15
GULTON CELLS

SERIAL 583,585,606,609,616

PROJECT ATS 6

SYNCHRONOUS ORBIT SHADOW PLOT

KEY
* HIGH END DISCHARGE VOLTAGE
+ AVE END DISCHARGE VOLTAGE
• LOW END DISCHARGE VOLTAGE
x HIGH EOC
x AVE EOC
y LOW EOC

PACK = 226A

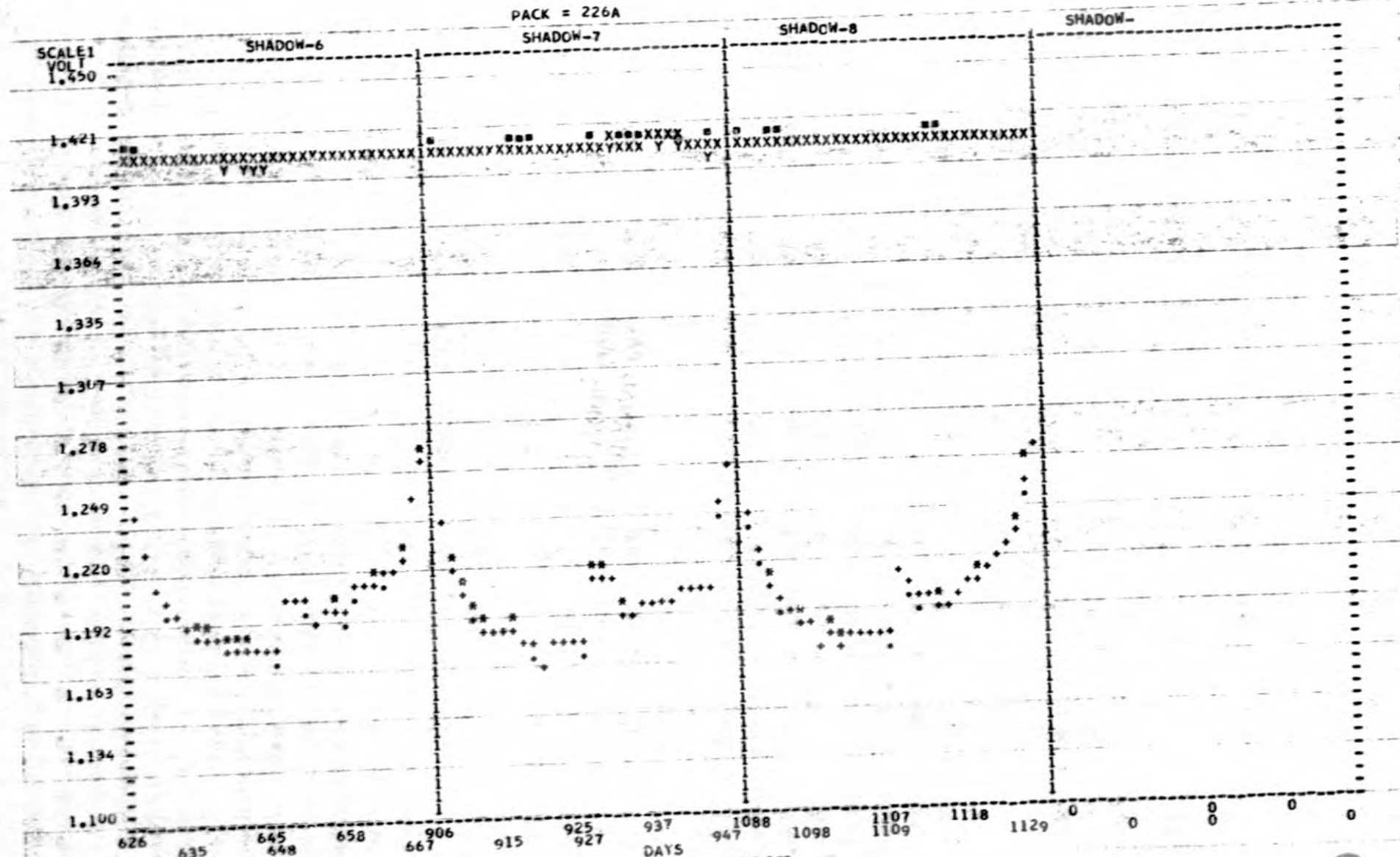


FIGURE 192

DEPTH DISCHARGE 50
 TEMPERATURE 20 GULTON MOFF/5 77-134
 AMPERE RATE 15
 SERIAL 583 585 606 609 616
 PROJECT ATS 6

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 226A

LOAD MODE TEST

SHADOW-3

SHADOW-4

SHADOW-5

SCALE
 24.11
 22.19
 20.26
 18.34
 16.41
 14.48
 12.56
 10.63
 8.70
 6.78
 4.85
 2.93
 1.00

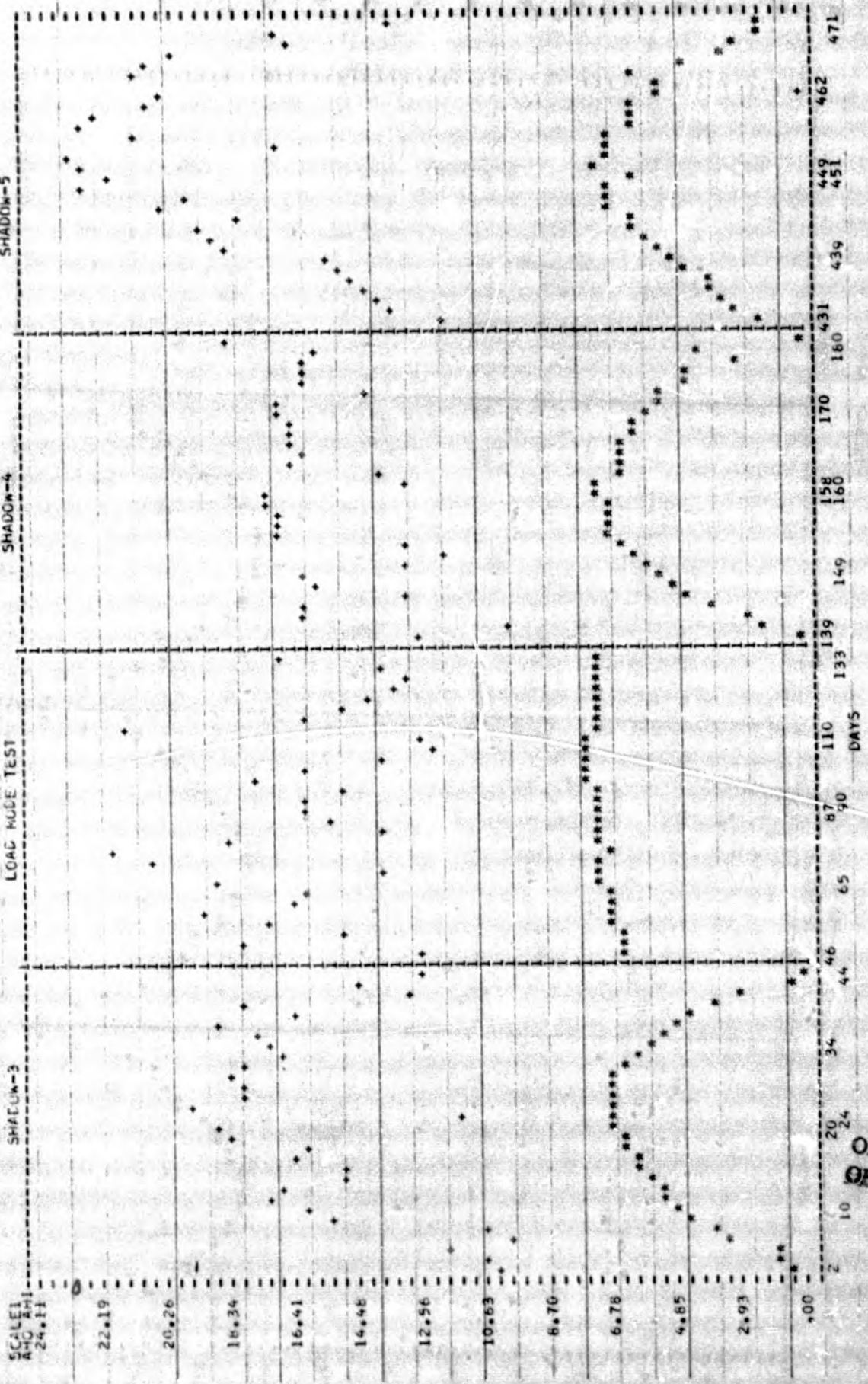


FIGURE 193

ORIGINAL PAGE
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MQEC/C 77-134

DEPTH DISCHARGE 50
TEMPERATURE 20
AMPERE RATE 15
GULFON CELLS
SERIAL 583, 585, 606, 609, 616
PROJECT AT 6

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 226A

KEY
* AHU
+ AHU-TOTAL

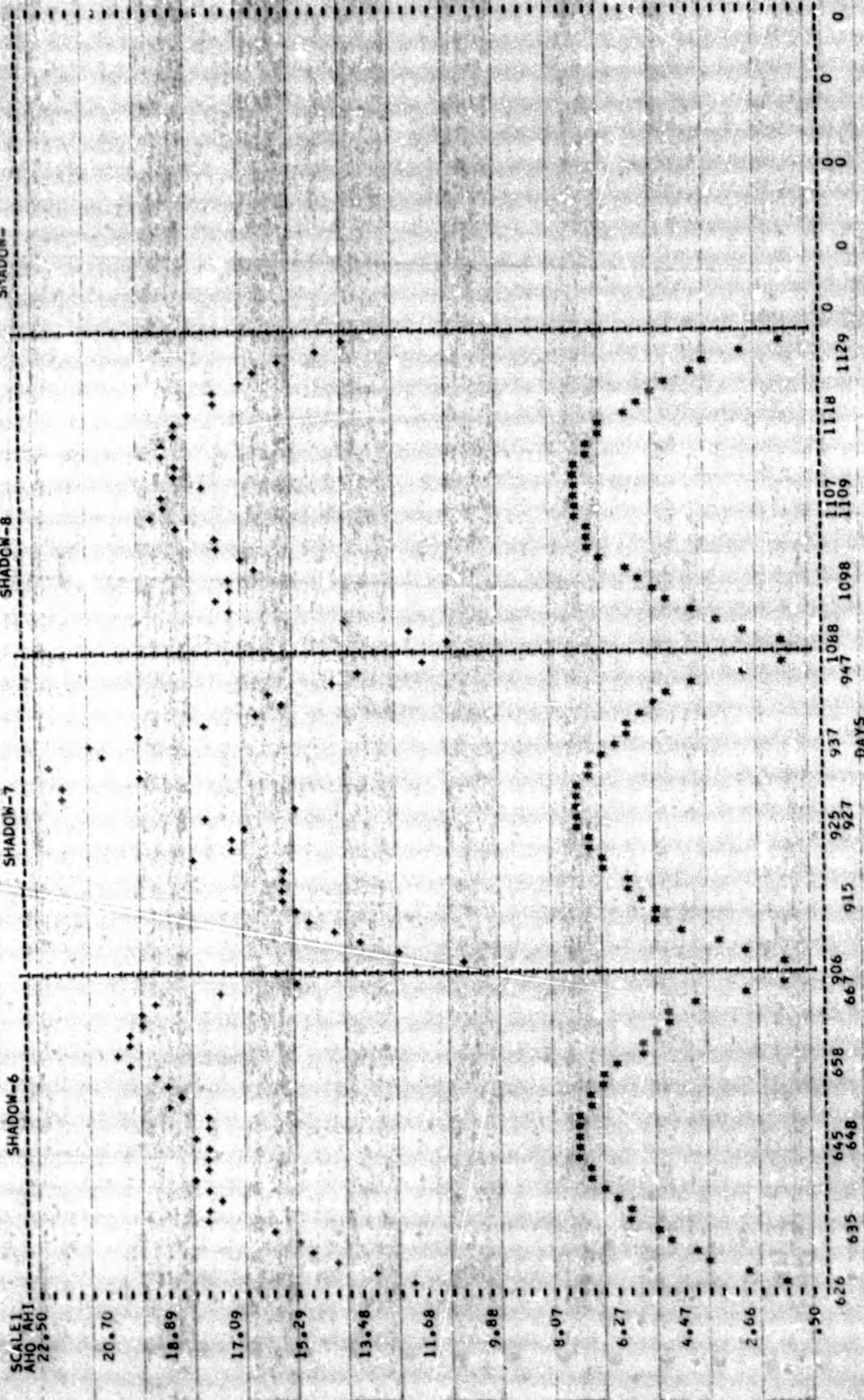


FIGURE 194

DEPTH DISCHARGE 50
TEMPERATURE
AMPERE RATE
SERIAL 583 585 606 609 616

GULTON CELLS
PROJECT ATS 6

SYNCHRONOUS ORBIT SHADOW PLOT

PACK = 226A

LOAD MODE TEST

SHADOW-3

SHADOW-4

SHADOW-5

KEY
* END CHARGE CURRENT

SCALE
CUR
0.000

0.547

0.793

0.740

0.687

0.634

0.580

0.537

0.480

0.427

0.374

0.320

15 25 35 45 55 65 75 85 95 105 115 125 135 145 155 165 175 185 195 205 215 225 235 245 255 265 275 285 295 305 315 325 335 345 355 365 375 385 395 405 415 425 435 445 455 465 475

ORIGINAL PAGE 1
OF POOR QUALITY

FIGURE 195

KEY
* END CHARGE CURRENT

SYNCHRONOUS ORBIT SHADOW PLOT

WJEC/C 77-134

DEPTH DISCHARGE 50
TEMPERATURE 20
ALLOY 80/20
SERIAL 555, 583, 606, 609, 616

PROJECT AT 6
GULTON CELLS

PACK = 226A

SCALE
CURR

SHADOW-6

SHADOW-7

SHADOW-8

SHADOW-

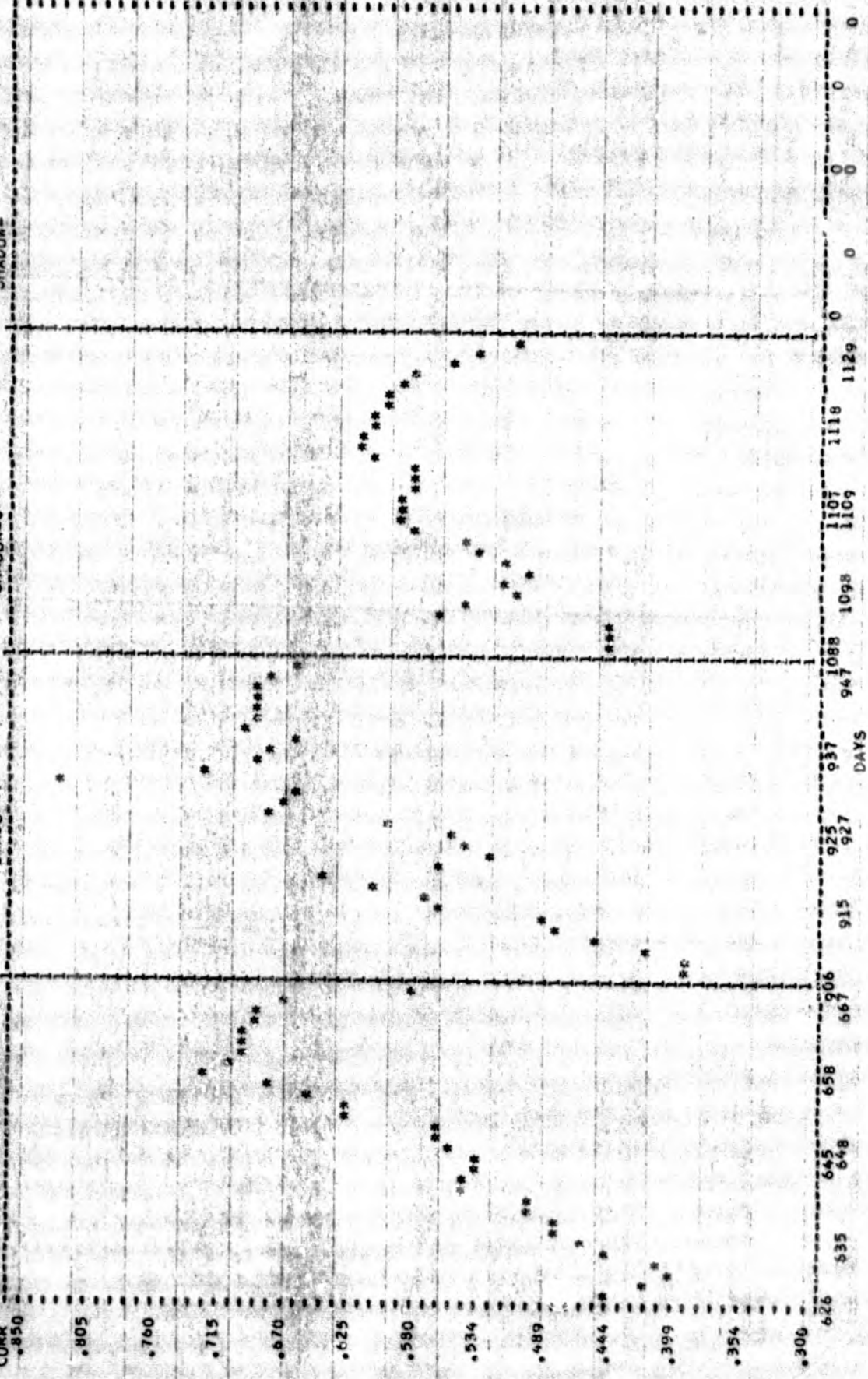


FIGURE 196

DATE OF RUN IS 09/14/76

PACK NUMBER IS 226A

SHADOW PERIOD IS 4

CYCLE IS

159.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|-------|------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 2040. | .300 | V1 | .329 | V2 | .328 | V4 | .328 | V5 | .328 | .000 | .328 | .328 |
| 2042. | .500 | V1 | .315 | V2 | .315 | V4 | .315 | V5 | .315 | .000 | .316 | .315 |
| 2044. | .800 | V1 | .305 | V2 | .305 | V4 | .305 | V5 | .305 | .000 | .306 | .305 |
| 2047. | .000 | V1 | .297 | V2 | .297 | V4 | .297 | V5 | .297 | .000 | .298 | .297 |
| 2049. | .200 | V1 | .290 | V2 | .290 | V4 | .290 | V5 | .290 | .000 | .291 | .290 |
| 2052. | .500 | V1 | .284 | V2 | .284 | V4 | .284 | V5 | .284 | .000 | .286 | .284 |
| 2054. | .800 | V1 | .279 | V2 | .279 | V4 | .279 | V5 | .279 | .000 | .280 | .279 |
| 2056. | .000 | V1 | .274 | V2 | .274 | V4 | .274 | V5 | .274 | .000 | .275 | .274 |
| 2059. | .300 | V1 | .270 | V2 | .270 | V4 | .270 | V5 | .270 | .000 | .271 | .270 |
| 2101. | .500 | V1 | .266 | V2 | .266 | V4 | .266 | V5 | .266 | .000 | .267 | .266 |
| 2104. | .800 | V1 | .261 | V2 | .261 | V4 | .261 | V5 | .261 | .000 | .263 | .261 |
| 2106. | .000 | V1 | .258 | V2 | .258 | V4 | .258 | V5 | .258 | .000 | .259 | .258 |
| 2108. | .300 | V1 | .255 | V2 | .255 | V4 | .255 | V5 | .255 | .000 | .256 | .255 |
| 2111. | .500 | V1 | .250 | V2 | .250 | V4 | .250 | V5 | .250 | .000 | .251 | .250 |
| 2113. | .800 | V1 | .246 | V2 | .246 | V4 | .246 | V5 | .246 | .000 | .247 | .246 |
| 2116. | .000 | V1 | .242 | V2 | .242 | V4 | .242 | V5 | .242 | .000 | .243 | .242 |
| 2118. | .300 | V1 | .239 | V2 | .239 | V4 | .239 | V5 | .239 | .000 | .240 | .239 |
| 2120. | .500 | V1 | .235 | V2 | .235 | V4 | .235 | V5 | .235 | .000 | .236 | .235 |
| 2123. | .800 | V1 | .231 | V2 | .231 | V4 | .231 | V5 | .231 | .000 | .232 | .231 |
| 2125. | .000 | V1 | .227 | V2 | .227 | V4 | .227 | V5 | .227 | .000 | .228 | .227 |
| 2128. | .300 | V1 | .223 | V2 | .223 | V4 | .223 | V5 | .223 | .000 | .224 | .223 |
| 2130. | .500 | V1 | .218 | V2 | .218 | V4 | .218 | V5 | .218 | .000 | .219 | .218 |
| 2132. | .800 | V1 | .215 | V2 | .215 | V4 | .215 | V5 | .215 | .000 | .216 | .215 |
| 2135. | .000 | V1 | .210 | V2 | .210 | V4 | .210 | V5 | .210 | .000 | .211 | .210 |
| 2137. | .300 | V1 | .204 | V2 | .204 | V4 | .204 | V5 | .204 | .000 | .205 | .204 |
| 2140. | .500 | V1 | .200 | V2 | .200 | V4 | .200 | V5 | .200 | .000 | .200 | .200 |
| 2142. | .800 | V1 | .199 | V2 | .199 | V4 | .199 | V5 | .199 | .000 | .199 | .199 |
| 2144. | .000 | V1 | .194 | V2 | .194 | V4 | .194 | V5 | .194 | .000 | .195 | .194 |
| 2149. | .300 | V1 | .188 | V2 | .188 | V4 | .188 | V5 | .188 | .000 | .189 | .188 |
| 2152. | .500 | V1 | .180 | V2 | .180 | V4 | .180 | V5 | .180 | .000 | .182 | .180 |
| 2154. | .800 | V1 | .174 | V2 | .174 | V4 | .174 | V5 | .174 | .000 | .175 | .174 |
| 2156. | .000 | V1 | .172 | V2 | .172 | V4 | .172 | V5 | .172 | .000 | .173 | .172 |
| 2201. | .300 | V1 | .169 | V2 | .169 | V4 | .169 | V5 | .169 | .000 | .170 | .169 |
| 2204. | .500 | V1 | .167 | V2 | .167 | V4 | .167 | V5 | .167 | .000 | .168 | .167 |
| 2206. | .800 | V1 | .165 | V2 | .165 | V4 | .165 | V5 | .165 | .000 | .166 | .165 |
| 2208. | .000 | V1 | .163 | V2 | .163 | V4 | .163 | V5 | .163 | .000 | .164 | .163 |
| 2211. | .300 | V1 | .160 | V2 | .160 | V4 | .160 | V5 | .160 | .000 | .162 | .160 |
| 2213. | .500 | V1 | .158 | V2 | .158 | V4 | .158 | V5 | .158 | .000 | .160 | .158 |
| 2216. | .800 | V1 | .155 | V2 | .155 | V4 | .155 | V5 | .155 | .000 | .156 | .155 |
| 2218. | .000 | V1 | .153 | V2 | .153 | V4 | .153 | V5 | .153 | .000 | .154 | .153 |
| 2220. | .300 | V1 | .150 | V2 | .150 | V4 | .150 | V5 | .150 | .000 | .151 | .150 |
| 2223. | .500 | V1 | .146 | V2 | .146 | V4 | .146 | V5 | .146 | .000 | .147 | .146 |
| 2225. | .800 | V1 | .145 | V2 | .145 | V4 | .145 | V5 | .145 | .000 | .146 | .145 |
| 2228. | .000 | V1 | .140 | V2 | .140 | V4 | .140 | V5 | .140 | .000 | .141 | .140 |
| 2230. | .300 | V1 | .136 | V2 | .136 | V4 | .136 | V5 | .136 | .000 | .137 | .136 |
| 2232. | .500 | V1 | .133 | V2 | .133 | V4 | .133 | V5 | .133 | .000 | .134 | .133 |
| 2234. | .800 | V1 | .130 | V2 | .130 | V4 | .130 | V5 | .130 | .000 | .131 | .130 |
| 2237. | .000 | V1 | .126 | V2 | .126 | V4 | .126 | V5 | .126 | .000 | .127 | .126 |
| 2240. | .300 | V1 | .122 | V2 | .122 | V4 | .122 | V5 | .122 | .000 | .123 | .122 |
| 2242. | .500 | V1 | .119 | V2 | .119 | V4 | .119 | V5 | .119 | .000 | .120 | .119 |
| 2244. | .800 | V1 | .116 | V2 | .116 | V4 | .116 | V5 | .116 | .000 | .117 | .116 |
| 2247. | .000 | V1 | .112 | V2 | .112 | V4 | .112 | V5 | .112 | .000 | .113 | .112 |
| 2250. | .300 | V1 | .109 | V2 | .109 | V4 | .109 | V5 | .109 | .000 | .110 | .109 |
| 2252. | .500 | V1 | .106 | V2 | .106 | V4 | .106 | V5 | .106 | .000 | .107 | .106 |
| 2254. | .800 | V1 | .103 | V2 | .103 | V4 | .103 | V5 | .103 | .000 | .104 | .103 |
| 2257. | .000 | V1 | .100 | V2 | .100 | V4 | .100 | V5 | .100 | .000 | .101 | .100 |

| DATE OF RUN IS 08/27/76 | | | | PACK NUMBER IS 226A | | | | SHADOW PERIOD IS 5 | | | | CYCLE IS 450. | | | | WQEC/C 77-134 | | | |
|-------------------------|------|--------|--------|---------------------|--------|--------|--------|--------------------|--------|--------|--------|---------------|--------|-------|-------|---------------|-------|--|--|
| | | | | | | | | | | | | | | | | PAGE IS 54. | | | |
| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V | | | | | |
| 900. | .010 | V1 | 1.324 | V2 | 1.326 | V3 | 1.326 | V4 | 1.325 | V5 | 1.326 | .000 | .000 | .000 | 1.326 | 1.326 | 1.325 | | |
| 902. | .260 | V1 | 1.313 | V2 | 1.312 | V3 | 1.312 | V4 | 1.313 | V5 | 1.313 | .000 | .000 | .000 | 1.313 | 1.313 | 1.312 | | |
| 903. | .510 | V1 | 1.302 | V2 | 1.302 | V3 | 1.302 | V4 | 1.302 | V5 | 1.302 | .000 | .000 | .000 | 1.302 | 1.302 | 1.302 | | |
| 907. | .760 | V1 | 1.294 | V2 | 1.294 | V3 | 1.293 | V4 | 1.294 | V5 | 1.294 | .000 | .000 | .000 | 1.294 | 1.294 | 1.293 | | |
| 909. | .010 | V1 | 1.287 | V2 | 1.287 | V3 | 1.285 | V4 | 1.287 | V5 | 1.287 | .000 | .000 | .000 | 1.286 | 1.287 | 1.285 | | |
| 912. | .270 | V1 | 1.281 | V2 | 1.281 | V3 | 1.280 | V4 | 1.281 | V5 | 1.282 | .000 | .000 | .000 | 1.281 | 1.282 | 1.280 | | |
| 914. | .520 | V1 | 1.276 | V2 | 1.276 | V3 | 1.275 | V4 | 1.276 | V5 | 1.276 | .000 | .000 | .000 | 1.276 | 1.276 | 1.275 | | |
| 917. | .770 | V1 | 1.271 | V2 | 1.271 | V3 | 1.270 | V4 | 1.271 | V5 | 1.272 | .000 | .000 | .000 | 1.271 | 1.272 | 1.270 | | |
| 919. | .020 | V1 | 1.267 | V2 | 1.267 | V3 | 1.265 | V4 | 1.267 | V5 | 1.268 | .000 | .000 | .000 | 1.267 | 1.268 | 1.265 | | |
| 921. | .270 | V1 | 1.263 | V2 | 1.263 | V3 | 1.262 | V4 | 1.263 | V5 | 1.264 | .000 | .000 | .000 | 1.263 | 1.264 | 1.262 | | |
| 924. | .520 | V1 | 1.259 | V2 | 1.260 | V3 | 1.259 | V4 | 1.260 | V5 | 1.260 | .000 | .000 | .000 | 1.260 | 1.260 | 1.259 | | |
| 926. | .770 | V1 | 1.255 | V2 | 1.256 | V3 | 1.255 | V4 | 1.256 | V5 | 1.257 | .000 | .000 | .000 | 1.256 | 1.257 | 1.255 | | |
| 929. | .020 | V1 | 1.252 | V2 | 1.253 | V3 | 1.252 | V4 | 1.253 | V5 | 1.254 | .000 | .000 | .000 | 1.253 | 1.254 | 1.252 | | |
| 931. | .270 | V1 | 1.249 | V2 | 1.250 | V3 | 1.249 | V4 | 1.250 | V5 | 1.251 | .000 | .000 | .000 | 1.250 | 1.251 | 1.249 | | |
| 933. | .520 | V1 | 1.247 | V2 | 1.247 | V3 | 1.246 | V4 | 1.247 | V5 | 1.248 | .000 | .000 | .000 | 1.247 | 1.248 | 1.246 | | |
| 936. | .770 | V1 | 1.244 | V2 | 1.244 | V3 | 1.243 | V4 | 1.244 | V5 | 1.245 | .000 | .000 | .000 | 1.244 | 1.245 | 1.243 | | |
| 938. | .020 | V1 | 1.241 | V2 | 1.241 | V3 | 1.240 | V4 | 1.241 | V5 | 1.242 | .000 | .000 | .000 | 1.241 | 1.242 | 1.240 | | |
| 941. | .270 | V1 | 1.238 | V2 | 1.238 | V3 | 1.238 | V4 | 1.239 | V5 | 1.239 | .000 | .000 | .000 | 1.238 | 1.239 | 1.237 | | |
| 943. | .520 | V1 | 1.235 | V2 | 1.235 | V3 | 1.235 | V4 | 1.236 | V5 | 1.236 | .000 | .000 | .000 | 1.235 | 1.236 | 1.235 | | |
| 945. | .770 | V1 | 1.233 | V2 | 1.233 | V3 | 1.232 | V4 | 1.233 | V5 | 1.234 | .000 | .000 | .000 | 1.233 | 1.234 | 1.232 | | |
| 948. | .020 | V1 | 1.230 | V2 | 1.230 | V3 | 1.230 | V4 | 1.231 | V5 | 1.231 | .000 | .000 | .000 | 1.230 | 1.231 | 1.229 | | |
| 950. | .280 | V1 | 1.227 | V2 | 1.227 | V3 | 1.227 | V4 | 1.228 | V5 | 1.228 | .000 | .000 | .000 | 1.227 | 1.228 | 1.227 | | |
| 953. | .530 | V1 | 1.224 | V2 | 1.225 | V3 | 1.225 | V4 | 1.226 | V5 | 1.226 | .000 | .000 | .000 | 1.225 | 1.226 | 1.224 | | |
| 955. | .780 | V1 | 1.222 | V2 | 1.222 | V3 | 1.222 | V4 | 1.223 | V5 | 1.223 | .000 | .000 | .000 | 1.222 | 1.223 | 1.222 | | |
| 957. | .030 | V1 | 1.219 | V2 | 1.220 | V3 | 1.220 | V4 | 1.221 | V5 | 1.221 | .000 | .000 | .000 | 1.220 | 1.221 | 1.219 | | |
| 1000. | .280 | V1 | 1.216 | V2 | 1.217 | V3 | 1.217 | V4 | 1.218 | V5 | 1.218 | .000 | .000 | .000 | 1.217 | 1.218 | 1.216 | | |
| 1002. | .530 | V1 | 1.214 | V2 | 1.215 | V3 | 1.215 | V4 | 1.216 | V5 | 1.216 | .000 | .000 | .000 | 1.215 | 1.216 | 1.214 | | |
| 1005. | .780 | V1 | 1.211 | V2 | 1.213 | V3 | 1.212 | V4 | 1.213 | V5 | 1.214 | .000 | .000 | .000 | 1.213 | 1.214 | 1.211 | | |
| 1007. | .030 | V1 | 1.209 | V2 | 1.210 | V3 | 1.210 | V4 | 1.211 | V5 | 1.211 | .000 | .000 | .000 | 1.210 | 1.211 | 1.209 | | |
| 1009. | .280 | V1 | 1.208 | V2 | 1.208 | V3 | 1.208 | V4 | 1.209 | V5 | 1.209 | .000 | .000 | .000 | 1.208 | 1.209 | 1.206 | | |
| 1012. | .530 | V1 | 1.206 | V2 | 1.206 | V3 | 1.205 | V4 | 1.207 | V5 | 1.207 | .000 | .000 | .000 | 1.206 | 1.207 | 1.204 | | |
| 1015. | .780 | V1 | 1.203 | V2 | 1.203 | V3 | 1.203 | V4 | 1.204 | V5 | 1.204 | .000 | .000 | .000 | 1.203 | 1.204 | 1.201 | | |
| 1017. | .030 | V1 | 1.201 | V2 | 1.201 | V3 | 1.201 | V4 | 1.202 | V5 | 1.202 | .000 | .000 | .000 | 1.201 | 1.202 | 1.199 | | |
| 1019. | .280 | V1 | 1.199 | V2 | 1.199 | V3 | 1.199 | V4 | 1.200 | V5 | 1.200 | .000 | .000 | .000 | 1.199 | 1.200 | 1.196 | | |
| 1021. | .530 | V1 | 1.197 | V2 | 1.197 | V3 | 1.195 | V4 | 1.197 | V5 | 1.197 | .000 | .000 | .000 | 1.196 | 1.197 | 1.194 | | |
| 1024. | .780 | V1 | 1.194 | V2 | 1.194 | V3 | 1.194 | V4 | 1.195 | V5 | 1.195 | .000 | .000 | .000 | 1.194 | 1.195 | 1.191 | | |
| 1025. | .030 | V1 | 1.192 | V2 | 1.192 | V3 | 1.192 | V4 | 1.193 | V5 | 1.193 | .000 | .000 | .000 | 1.192 | 1.193 | 1.189 | | |
| 1029. | .280 | V1 | 1.190 | V2 | 1.190 | V3 | 1.190 | V4 | 1.191 | V5 | 1.191 | .000 | .000 | .000 | 1.190 | 1.191 | 1.186 | | |
| 1031. | .530 | V1 | 1.187 | V2 | 1.187 | V3 | 1.187 | V4 | 1.188 | V5 | 1.188 | .000 | .000 | .000 | 1.187 | 1.188 | 1.183 | | |
| 1033. | .780 | V1 | 1.185 | V2 | 1.185 | V3 | 1.185 | V4 | 1.186 | V5 | 1.185 | .000 | .000 | .000 | 1.184 | 1.186 | 1.180 | | |
| 1036. | .030 | V1 | 1.183 | V2 | 1.183 | V3 | 1.183 | V4 | 1.183 | V5 | 1.183 | .000 | .000 | .000 | 1.181 | 1.183 | 1.176 | | |
| 1038. | .280 | V1 | 1.180 | V2 | 1.180 | V3 | 1.180 | V4 | 1.181 | V5 | 1.181 | .000 | .000 | .000 | 1.179 | 1.181 | 1.172 | | |
| 1041. | .530 | V1 | 1.177 | V2 | 1.177 | V3 | 1.177 | V4 | 1.178 | V5 | 1.178 | .000 | .000 | .000 | 1.175 | 1.178 | 1.165 | | |
| 1043. | .790 | V1 | 1.174 | V2 | 1.174 | V3 | 1.175 | V4 | 1.175 | V5 | 1.175 | .000 | .000 | .000 | 1.172 | 1.175 | 1.162 | | |
| 1045. | .040 | V1 | 1.171 | V2 | 1.171 | V3 | 1.172 | V4 | 1.172 | V5 | 1.172 | .000 | .000 | .000 | 1.168 | 1.172 | 1.155 | | |
| 1048. | .290 | V1 | 1.167 | V2 | 1.167 | V3 | 1.168 | V4 | 1.168 | V5 | 1.168 | .000 | .000 | .000 | 1.164 | 1.168 | 1.147 | | |
| 1050. | .540 | V1 | 1.164 | V2 | 1.164 | V3 | 1.164 | V4 | 1.164 | V5 | 1.164 | .000 | .000 | .000 | 1.158 | 1.164 | 1.136 | | |
| 1053. | .790 | V1 | 1.159 | V2 | 1.159 | V3 | 1.159 | V4 | 1.159 | V5 | 1.159 | .000 | .000 | .000 | 1.152 | 1.160 | 1.124 | | |
| 1055. | .040 | V1 | 1.155 | V2 | 1.155 | V3 | 1.155 | V4 | 1.155 | V5 | 1.155 | .000 | .000 | .000 | 1.143 | 1.155 | 1.112 | | |
| 1057. | .290 | V1 | 1.148 | V2 | 1.148 | V3 | 1.148 | V4 | 1.148 | V5 | 1.148 | .000 | .000 | .000 | 1.133 | 1.148 | 1.100 | | |
| 1100. | .540 | V1 | 1.135 | V2 | 1.135 | V3 | 1.135 | V4 | 1.135 | V5 | 1.135 | .000 | .000 | .000 | 1.133 | 1.135 | 1.100 | | |
| 1102. | .790 | V1 | 1.131 | V2 | 1.131 | V3 | 1.131 | V4 | 1.131 | V5 | 1.131 | .000 | .000 | .000 | 1.121 | 1.131 | 1.090 | | |
| 1105. | .040 | V1 | 1.105 | V2 | 1.105 | V3 | 1.105 | V4 | 1.105 | V5 | 1.105 | .000 | .000 | .000 | 1.098 | 1.105 | 1.072 | | |

DATE OF RUN IS 08/27/76

PACK NUMBER IS 226A

SHADOW PERIOD IS 5

CYCLE IS

450.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 07. | 3.290 | V1 | .057 | V2 | .087 | V3 | .105 | V4 | .094 | V5 | .096 | .000 | .057 |
| 09. | 3.240 | V1 | .063 | V2 | .080 | V3 | .095 | V4 | .087 | V5 | .088 | .000 | .063 |
| 11. | 3.190 | V1 | .069 | V2 | .073 | V3 | .088 | V4 | .080 | V5 | .082 | .000 | .069 |
| 13. | 3.140 | V1 | .075 | V2 | .067 | V3 | .081 | V4 | .073 | V5 | .075 | .000 | .075 |
| 15. | 3.090 | V1 | .081 | V2 | .062 | V3 | .074 | V4 | .067 | V5 | .069 | .000 | .081 |
| 17. | 3.040 | V1 | .087 | V2 | .058 | V3 | .067 | V4 | .062 | V5 | .064 | .000 | .087 |
| 19. | 2.990 | V1 | .093 | V2 | .054 | V3 | .062 | V4 | .057 | V5 | .059 | .000 | .093 |
| 21. | 2.940 | V1 | .099 | V2 | .050 | V3 | .057 | V4 | .054 | V5 | .055 | .000 | .099 |
| 23. | 2.890 | V1 | .105 | V2 | .046 | V3 | .052 | V4 | .051 | V5 | .049 | .000 | .105 |
| 25. | 2.840 | V1 | .111 | V2 | .042 | V3 | .049 | V4 | .048 | V5 | .047 | .000 | .111 |
| 27. | 2.790 | V1 | .117 | V2 | .038 | V3 | .045 | V4 | .045 | V5 | .044 | .000 | .117 |
| 29. | 2.740 | V1 | .123 | V2 | .034 | V3 | .042 | V4 | .042 | V5 | .044 | .000 | .123 |
| 31. | 2.690 | V1 | .129 | V2 | .030 | V3 | .039 | V4 | .039 | V5 | .041 | .000 | .129 |
| 33. | 2.640 | V1 | .135 | V2 | .026 | V3 | .035 | V4 | .036 | V5 | .038 | .000 | .135 |
| 35. | 2.590 | V1 | .141 | V2 | .022 | V3 | .031 | V4 | .033 | V5 | .036 | .000 | .141 |
| 37. | 2.540 | V1 | .147 | V2 | .018 | V3 | .027 | V4 | .030 | V5 | .033 | .000 | .147 |
| 39. | 2.490 | V1 | .153 | V2 | .014 | V3 | .023 | V4 | .027 | V5 | .030 | .000 | .153 |
| 41. | 2.440 | V1 | .159 | V2 | .010 | V3 | .019 | V4 | .023 | V5 | .026 | .000 | .159 |
| 43. | 2.390 | V1 | .165 | V2 | .006 | V3 | .015 | V4 | .019 | V5 | .023 | .000 | .165 |
| 45. | 2.340 | V1 | .171 | V2 | .002 | V3 | .011 | V4 | .015 | V5 | .018 | .000 | .171 |
| 47. | 2.290 | V1 | .177 | V2 | .998 | V3 | .998 | V4 | .010 | V5 | .014 | .000 | .177 |
| 49. | 2.240 | V1 | .183 | V2 | .994 | V3 | .994 | V4 | .006 | V5 | .008 | .000 | .183 |
| 51. | 2.190 | V1 | .189 | V2 | .990 | V3 | .990 | V4 | .002 | V5 | .004 | .000 | .189 |
| 53. | 2.140 | V1 | .195 | V2 | .986 | V3 | .986 | V4 | .000 | V5 | .000 | .000 | .195 |
| 55. | 2.090 | V1 | .201 | V2 | .982 | V3 | .982 | V4 | .000 | V5 | .000 | .000 | .201 |
| 57. | 2.040 | V1 | .207 | V2 | .978 | V3 | .978 | V4 | .000 | V5 | .000 | .000 | .207 |
| 59. | 1.990 | V1 | .213 | V2 | .974 | V3 | .974 | V4 | .000 | V5 | .000 | .000 | .213 |
| 61. | 1.940 | V1 | .219 | V2 | .970 | V3 | .970 | V4 | .000 | V5 | .000 | .000 | .219 |
| 63. | 1.890 | V1 | .225 | V2 | .966 | V3 | .966 | V4 | .000 | V5 | .000 | .000 | .225 |
| 65. | 1.840 | V1 | .231 | V2 | .962 | V3 | .962 | V4 | .000 | V5 | .000 | .000 | .231 |
| 67. | 1.790 | V1 | .237 | V2 | .958 | V3 | .958 | V4 | .000 | V5 | .000 | .000 | .237 |
| 69. | 1.740 | V1 | .243 | V2 | .954 | V3 | .954 | V4 | .000 | V5 | .000 | .000 | .243 |
| 71. | 1.690 | V1 | .249 | V2 | .950 | V3 | .950 | V4 | .000 | V5 | .000 | .000 | .249 |
| 73. | 1.640 | V1 | .255 | V2 | .946 | V3 | .946 | V4 | .000 | V5 | .000 | .000 | .255 |
| 75. | 1.590 | V1 | .261 | V2 | .942 | V3 | .942 | V4 | .000 | V5 | .000 | .000 | .261 |
| 77. | 1.540 | V1 | .267 | V2 | .938 | V3 | .938 | V4 | .000 | V5 | .000 | .000 | .267 |
| 79. | 1.490 | V1 | .273 | V2 | .934 | V3 | .934 | V4 | .000 | V5 | .000 | .000 | .273 |
| 81. | 1.440 | V1 | .279 | V2 | .930 | V3 | .930 | V4 | .000 | V5 | .000 | .000 | .279 |
| 83. | 1.390 | V1 | .285 | V2 | .926 | V3 | .926 | V4 | .000 | V5 | .000 | .000 | .285 |
| 85. | 1.340 | V1 | .291 | V2 | .922 | V3 | .922 | V4 | .000 | V5 | .000 | .000 | .291 |
| 87. | 1.290 | V1 | .297 | V2 | .918 | V3 | .918 | V4 | .000 | V5 | .000 | .000 | .297 |
| 89. | 1.240 | V1 | .303 | V2 | .914 | V3 | .914 | V4 | .000 | V5 | .000 | .000 | .303 |
| 91. | 1.190 | V1 | .309 | V2 | .910 | V3 | .910 | V4 | .000 | V5 | .000 | .000 | .309 |
| 93. | 1.140 | V1 | .315 | V2 | .906 | V3 | .906 | V4 | .000 | V5 | .000 | .000 | .315 |
| 95. | 1.090 | V1 | .321 | V2 | .902 | V3 | .902 | V4 | .000 | V5 | .000 | .000 | .321 |
| 97. | 1.040 | V1 | .327 | V2 | .898 | V3 | .898 | V4 | .000 | V5 | .000 | .000 | .327 |
| 99. | 0.990 | V1 | .333 | V2 | .894 | V3 | .894 | V4 | .000 | V5 | .000 | .000 | .333 |

ORIGINAL PAGE IS
OF MAJOR QUANTITY

DATE OF RUN IS 09/10/76

PACK NUMBER IS 226A

SHADOW PERIOD IS 6

CYCLE IS

646.

MQEC/C 77-134

PAGE IS 35.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|-------|------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 1353. | 200 | V1 | 1.317 | V2 | 1.317 | V3 | 1.317 | V4 | 1.317 | 1.317 | 1.318 | 1.316 |
| 1357. | 700 | V1 | 1.293 | V2 | 1.293 | V3 | 1.293 | V4 | 1.293 | 1.293 | 1.293 | 1.292 |
| 1405. | 500 | V1 | 1.272 | V2 | 1.272 | V3 | 1.272 | V4 | 1.272 | 1.272 | 1.272 | 1.270 |
| 1412. | 200 | V1 | 1.257 | V2 | 1.257 | V3 | 1.257 | V4 | 1.257 | 1.257 | 1.258 | 1.256 |
| 1419. | 000 | V1 | 1.245 | V2 | 1.245 | V3 | 1.245 | V4 | 1.245 | 1.245 | 1.246 | 1.244 |
| 1426. | 700 | V1 | 1.234 | V2 | 1.234 | V3 | 1.234 | V4 | 1.234 | 1.234 | 1.235 | 1.233 |
| 1433. | 500 | V1 | 1.223 | V2 | 1.223 | V3 | 1.223 | V4 | 1.223 | 1.223 | 1.224 | 1.222 |
| 1441. | 200 | V1 | 1.211 | V2 | 1.211 | V3 | 1.211 | V4 | 1.211 | 1.211 | 1.212 | 1.211 |
| 1448. | 000 | V1 | 1.200 | V2 | 1.200 | V3 | 1.200 | V4 | 1.200 | 1.200 | 1.201 | 1.199 |
| 1455. | 700 | V1 | 1.189 | V2 | 1.189 | V3 | 1.189 | V4 | 1.189 | 1.189 | 1.190 | 1.188 |
| 1502. | 500 | V1 | 1.179 | V2 | 1.179 | V3 | 1.179 | V4 | 1.179 | 1.180 | 1.182 | 1.178 |
| 1509. | 200 | V1 | 1.171 | V2 | 1.171 | V3 | 1.171 | V4 | 1.171 | 1.174 | 1.176 | 1.171 |
| 1517. | 000 | V1 | 1.167 | V2 | 1.167 | V3 | 1.167 | V4 | 1.167 | 1.170 | 1.172 | 1.166 |
| 1524. | 700 | V1 | 1.161 | V2 | 1.161 | V3 | 1.161 | V4 | 1.161 | 1.166 | 1.168 | 1.161 |
| 1531. | 500 | V1 | 1.153 | V2 | 1.153 | V3 | 1.153 | V4 | 1.153 | 1.159 | 1.164 | 1.153 |
| 1538. | 200 | V1 | 1.147 | V2 | 1.147 | V3 | 1.147 | V4 | 1.147 | 1.154 | 1.158 | 1.143 |
| 1545. | 000 | V1 | 1.148 | V2 | 1.148 | V3 | 1.148 | V4 | 1.148 | 1.144 | 1.149 | 1.126 |
| 1553. | 700 | V1 | 1.131 | V2 | 1.131 | V3 | 1.131 | V4 | 1.131 | 1.127 | 1.135 | 1.106 |
| 1600. | 500 | V1 | 1.104 | V2 | 1.104 | V3 | 1.104 | V4 | 1.104 | 1.104 | 1.113 | 1.085 |
| 1607. | 200 | V1 | 1.082 | V2 | 1.082 | V3 | 1.082 | V4 | 1.082 | 1.082 | 1.090 | 1.066 |
| 1614. | 000 | V1 | 1.063 | V2 | 1.063 | V3 | 1.063 | V4 | 1.063 | 1.063 | 1.069 | 1.051 |
| 1621. | 700 | V1 | 1.047 | V2 | 1.047 | V3 | 1.047 | V4 | 1.047 | 1.048 | 1.051 | 1.041 |
| 1629. | 500 | V1 | 1.037 | V2 | 1.037 | V3 | 1.037 | V4 | 1.037 | 1.037 | 1.040 | 1.032 |
| 1636. | 300 | V1 | 1.023 | V2 | 1.023 | V3 | 1.023 | V4 | 1.023 | 1.025 | 1.029 | 1.020 |
| 1643. | 000 | V1 | 1.007 | V2 | 1.007 | V3 | 1.007 | V4 | 1.007 | 1.010 | 1.017 | 1.006 |
| 1648. | 500 | V1 | 1.000 | V2 | 1.000 | V3 | 1.000 | V4 | 1.000 | 1.000 | 1.009 | 1.000 |

DATE OF RUN IS 09/10/76

PACK NUMBER IS 226A

SHADOW PERIOD IS 7

CYCLE IS

926.

WQEC/C 1 4

PAGE IS 36.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HTGH-V | LOW-V | |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|-------|
| 844. | .250 | V1 | 1.314 | V2 | 1.315 | V3 | 1.314 | V4 | 1.314 | V5 | 1.314 | 1.315 | 1.316 | 1.314 |
| 846. | .500 | V1 | 1.300 | V2 | 1.300 | V3 | 1.299 | V4 | 1.300 | V5 | 1.300 | 1.300 | 1.301 | 1.299 |
| 849. | .750 | V1 | 1.289 | V2 | 1.289 | V3 | 1.288 | V4 | 1.289 | V5 | 1.289 | 1.289 | 1.290 | 1.288 |
| 851. | 1.000 | V1 | 1.281 | V2 | 1.280 | V3 | 1.279 | V4 | 1.280 | V5 | 1.280 | 1.281 | 1.281 | 1.279 |
| 854. | 1.250 | V1 | 1.273 | V2 | 1.273 | V3 | 1.272 | V4 | 1.272 | V5 | 1.273 | 1.273 | 1.273 | 1.272 |
| 856. | 1.500 | V1 | 1.266 | V2 | 1.266 | V3 | 1.266 | V4 | 1.266 | V5 | 1.267 | 1.267 | 1.267 | 1.266 |
| 858. | 1.750 | V1 | 1.261 | V2 | 1.261 | V3 | 1.260 | V4 | 1.261 | V5 | 1.262 | 1.262 | 1.262 | 1.260 |
| 903. | 2.250 | V1 | 1.252 | V2 | 1.252 | V3 | 1.251 | V4 | 1.251 | V5 | 1.253 | 1.253 | 1.253 | 1.251 |
| 910. | 3.010 | V1 | 1.240 | V2 | 1.240 | V3 | 1.240 | V4 | 1.240 | V5 | 1.241 | 1.241 | 1.241 | 1.240 |
| 918. | 3.760 | V1 | 1.229 | V2 | 1.229 | V3 | 1.229 | V4 | 1.230 | V5 | 1.230 | 1.229 | 1.230 | 1.229 |
| 925. | 4.510 | V1 | 1.218 | V2 | 1.218 | V3 | 1.218 | V4 | 1.218 | V5 | 1.219 | 1.218 | 1.219 | 1.218 |
| 932. | 5.270 | V1 | 1.208 | V2 | 1.208 | V3 | 1.208 | V4 | 1.207 | V5 | 1.208 | 1.208 | 1.208 | 1.207 |
| 939. | 6.020 | V1 | 1.197 | V2 | 1.197 | V3 | 1.197 | V4 | 1.196 | V5 | 1.198 | 1.197 | 1.198 | 1.196 |
| 946. | 6.770 | V1 | 1.187 | V2 | 1.187 | V3 | 1.186 | V4 | 1.186 | V5 | 1.188 | 1.187 | 1.188 | 1.186 |
| 954. | 7.530 | V1 | 1.179 | V2 | 1.179 | V3 | 1.178 | V4 | 1.178 | V5 | 1.180 | 1.178 | 1.180 | 1.177 |
| 1001. | 8.280 | V1 | 1.173 | V2 | 1.173 | V3 | 1.172 | V4 | 1.172 | V5 | 1.174 | 1.173 | 1.175 | 1.170 |
| 1008. | 9.030 | V1 | 1.169 | V2 | 1.169 | V3 | 1.168 | V4 | 1.168 | V5 | 1.170 | 1.169 | 1.171 | 1.165 |
| 1015. | 9.790 | V1 | 1.165 | V2 | 1.165 | V3 | 1.163 | V4 | 1.163 | V5 | 1.165 | 1.164 | 1.167 | 1.160 |
| 1022. | 10.540 | V1 | 1.161 | V2 | 1.161 | V3 | 1.158 | V4 | 1.158 | V5 | 1.160 | 1.159 | 1.163 | 1.152 |
| 1030. | 11.290 | V1 | 1.156 | V2 | 1.156 | V3 | 1.153 | V4 | 1.153 | V5 | 1.153 | 1.152 | 1.159 | 1.141 |
| 1037. | 12.040 | V1 | 1.147 | V2 | 1.147 | V3 | 1.142 | V4 | 1.142 | V5 | 1.140 | 1.139 | 1.142 | 1.122 |
| 1044. | 12.800 | V1 | 1.141 | V2 | 1.141 | V3 | 1.139 | V4 | 1.139 | V5 | 1.139 | 1.139 | 1.142 | 1.101 |
| 1051. | 13.550 | V1 | 1.139 | V2 | 1.139 | V3 | 1.139 | V4 | 1.139 | V5 | 1.139 | 1.139 | 1.142 | 1.081 |
| 1058. | 14.300 | V1 | 1.139 | V2 | 1.139 | V3 | 1.139 | V4 | 1.139 | V5 | 1.139 | 1.139 | 1.142 | 1.062 |
| 1106. | 15.060 | V1 | 1.139 | V2 | 1.139 | V3 | 1.139 | V4 | 1.139 | V5 | 1.139 | 1.139 | 1.142 | 1.050 |
| 1113. | 15.810 | V1 | 1.139 | V2 | 1.139 | V3 | 1.139 | V4 | 1.139 | V5 | 1.139 | 1.139 | 1.142 | 1.041 |
| 1120. | 16.570 | V1 | 1.139 | V2 | 1.139 | V3 | 1.139 | V4 | 1.139 | V5 | 1.139 | 1.139 | 1.142 | 1.031 |
| 1127. | 17.320 | V1 | 1.139 | V2 | 1.139 | V3 | 1.139 | V4 | 1.139 | V5 | 1.139 | 1.139 | 1.142 | 1.018 |
| 1134. | 18.070 | V1 | 1.139 | V2 | 1.139 | V3 | 1.139 | V4 | 1.139 | V5 | 1.139 | 1.139 | 1.142 | 1.004 |
| 1142. | 18.830 | V1 | 1.139 | V2 | 1.139 | V3 | 1.139 | V4 | 1.139 | V5 | 1.139 | 1.139 | 1.142 | 1.000 |

ORIGINAL PAGE IS
OF POOR QUALITY

DATE OF RUN IS 09/10/76

PACK NUMBER IS 226A

SHADOW PERIOD IS 8

CYCLE IS 15

1108.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HTGH-V | LOW-V |
|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 849. | 1.251 | V1 | 1.314 | V2 | 1.314 | V3 | 1.314 | V4 | 1.314 | .000 | .000 | .000 |
| 856. | 1.004 | V1 | 1.281 | V2 | 1.281 | V3 | 1.281 | V4 | 1.281 | .000 | .000 | .000 |
| 856. | 1.008 | V1 | 1.258 | V2 | 1.258 | V3 | 1.258 | V4 | 1.258 | .000 | .000 | .000 |
| 906. | 1.012 | V1 | 1.243 | V2 | 1.243 | V3 | 1.243 | V4 | 1.243 | .000 | .000 | .000 |
| 913. | 1.016 | V1 | 1.229 | V2 | 1.229 | V3 | 1.229 | V4 | 1.229 | .000 | .000 | .000 |
| 923. | 1.020 | V1 | 1.214 | V2 | 1.214 | V3 | 1.214 | V4 | 1.214 | .000 | .000 | .000 |
| 934. | 1.024 | V1 | 1.199 | V2 | 1.199 | V3 | 1.199 | V4 | 1.199 | .000 | .000 | .000 |
| 944. | 1.028 | V1 | 1.184 | V2 | 1.184 | V3 | 1.184 | V4 | 1.184 | .000 | .000 | .000 |
| 954. | 1.032 | V1 | 1.169 | V2 | 1.169 | V3 | 1.169 | V4 | 1.169 | .000 | .000 | .000 |
| 1003. | 1.036 | V1 | 1.154 | V2 | 1.154 | V3 | 1.154 | V4 | 1.154 | .000 | .000 | .000 |
| 1013. | 1.040 | V1 | 1.139 | V2 | 1.139 | V3 | 1.139 | V4 | 1.139 | .000 | .000 | .000 |
| 1022. | 1.044 | V1 | 1.124 | V2 | 1.124 | V3 | 1.124 | V4 | 1.124 | .000 | .000 | .000 |
| 1032. | 1.047 | V1 | 1.109 | V2 | 1.109 | V3 | 1.109 | V4 | 1.109 | .000 | .000 | .000 |
| 1042. | 1.051 | V1 | 1.094 | V2 | 1.094 | V3 | 1.094 | V4 | 1.094 | .000 | .000 | .000 |
| 1051. | 1.055 | V1 | 1.079 | V2 | 1.079 | V3 | 1.079 | V4 | 1.079 | .000 | .000 | .000 |
| 1101. | 1.059 | V1 | 1.064 | V2 | 1.064 | V3 | 1.064 | V4 | 1.064 | .000 | .000 | .000 |
| 1110. | 1.063 | V1 | 1.049 | V2 | 1.049 | V3 | 1.049 | V4 | 1.049 | .000 | .000 | .000 |
| 1120. | 1.067 | V1 | 1.034 | V2 | 1.034 | V3 | 1.034 | V4 | 1.034 | .000 | .000 | .000 |
| 1130. | 1.071 | V1 | 1.019 | V2 | 1.019 | V3 | 1.019 | V4 | 1.019 | .000 | .000 | .000 |
| 1134. | 1.075 | V1 | 1.004 | V2 | 1.004 | V3 | 1.004 | V4 | 1.004 | .000 | .000 | .000 |

| DATE | CF | HUN | 15 | 08/27/76 | AVE-DIS | LOW-DIS | HIGH-CHAR | AVE-CHAR | LOW-CHAR | AHO | AHI |
|------|------|------|------|----------|---------|---------|-----------|----------|----------|-------|--------|
| 226A | 626. | 627. | 628. | 629. | 244 | 243 | 414 | 411 | 408 | 1.660 | 12.000 |
| 226A | 627. | 628. | 629. | 630. | 227 | 225 | 414 | 411 | 407 | 2.500 | 13.000 |
| 226A | 628. | 629. | 630. | 631. | 208 | 207 | 410 | 410 | 408 | 3.700 | 14.200 |
| 226A | 629. | 630. | 631. | 632. | 201 | 200 | 410 | 410 | 408 | 4.200 | 14.900 |
| 226A | 630. | 631. | 632. | 633. | 196 | 195 | 410 | 409 | 408 | 4.700 | 15.200 |
| 226A | 631. | 632. | 633. | 634. | 198 | 191 | 410 | 409 | 408 | 5.200 | 16.000 |
| 226A | 632. | 633. | 634. | 635. | 194 | 186 | 410 | 409 | 408 | 5.800 | 17.700 |
| 226A | 633. | 634. | 635. | 636. | 189 | 184 | 410 | 409 | 408 | 6.000 | 17.600 |
| 226A | 634. | 635. | 636. | 637. | 187 | 185 | 410 | 409 | 408 | 6.200 | 17.700 |
| 226A | 635. | 636. | 637. | 638. | 184 | 182 | 408 | 407 | 406 | 7.000 | 18.300 |
| 226A | 636. | 637. | 638. | 639. | 182 | 180 | 409 | 408 | 407 | 7.000 | 17.800 |
| 226A | 637. | 638. | 639. | 640. | 184 | 181 | 409 | 408 | 406 | 7.200 | 17.900 |
| 226A | 638. | 639. | 640. | 641. | 182 | 179 | 409 | 408 | 406 | 7.200 | 17.700 |
| 226A | 639. | 640. | 641. | 642. | 181 | 177 | 409 | 408 | 406 | 7.200 | 18.100 |
| 226A | 640. | 641. | 642. | 643. | 181 | 179 | 409 | 408 | 407 | 7.500 | 17.700 |
| 226A | 641. | 642. | 643. | 644. | 206 | 205 | 409 | 408 | 407 | 7.500 | 17.900 |
| 226A | 642. | 643. | 644. | 645. | 204 | 203 | 409 | 408 | 407 | 7.040 | 19.000 |
| 226A | 643. | 644. | 645. | 646. | 202 | 201 | 409 | 408 | 407 | 7.040 | 18.710 |
| 226A | 644. | 645. | 646. | 647. | 193 | 192 | 409 | 408 | 407 | 6.780 | 18.910 |
| 226A | 645. | 646. | 647. | 648. | 199 | 198 | 409 | 408 | 407 | 6.530 | 19.200 |
| 226A | 646. | 647. | 648. | 649. | 196 | 194 | 409 | 408 | 408 | 6.350 | 19.850 |
| 226A | 647. | 648. | 649. | 650. | 201 | 200 | 410 | 409 | 408 | 5.720 | 20.350 |
| 226A | 648. | 649. | 650. | 651. | 196 | 205 | 411 | 409 | 408 | 5.470 | 20.050 |
| 226A | 649. | 650. | 651. | 652. | 208 | 207 | 411 | 409 | 408 | 5.230 | 20.040 |
| 226A | 650. | 651. | 652. | 653. | 210 | 208 | 411 | 409 | 408 | 4.470 | 19.780 |
| 226A | 651. | 652. | 653. | 654. | 212 | 211 | 411 | 409 | 408 | 4.730 | 19.500 |
| 226A | 652. | 653. | 654. | 655. | 215 | 213 | 411 | 409 | 408 | 4.230 | 19.150 |
| 226A | 653. | 654. | 655. | 656. | 222 | 220 | 411 | 409 | 408 | 2.490 | 17.500 |
| 226A | 654. | 655. | 656. | 657. | 224 | 223 | 411 | 409 | 408 | 2.490 | 15.130 |
| 226A | 655. | 656. | 657. | 658. | 250 | 247 | 411 | 409 | 407 | 1.490 | 10.450 |
| 226A | 656. | 657. | 658. | 659. | 240 | 236 | 411 | 409 | 407 | 2.500 | 12.300 |
| 226A | 657. | 658. | 659. | 660. | 218 | 215 | 410 | 409 | 408 | 2.500 | 13.300 |
| 226A | 658. | 659. | 660. | 661. | 207 | 204 | 410 | 409 | 408 | 4.370 | 14.300 |
| 226A | 659. | 660. | 661. | 662. | 196 | 191 | 410 | 409 | 408 | 5.010 | 14.800 |
| 226A | 660. | 661. | 662. | 663. | 189 | 188 | 411 | 409 | 408 | 5.270 | 15.200 |
| 226A | 661. | 662. | 663. | 664. | 188 | 186 | 411 | 409 | 408 | 5.520 | 15.690 |
| 226A | 662. | 663. | 664. | 665. | 188 | 184 | 411 | 409 | 408 | 5.770 | 15.700 |
| 226A | 663. | 664. | 665. | 666. | 187 | 185 | 411 | 409 | 408 | 6.020 | 15.800 |
| 226A | 664. | 665. | 666. | 667. | 189 | 182 | 413 | 411 | 409 | 6.770 | 15.780 |
| 226A | 665. | 666. | 667. | 668. | 183 | 175 | 413 | 411 | 409 | 6.770 | 18.180 |
| 226A | 666. | 667. | 668. | 669. | 179 | 169 | 413 | 411 | 408 | 7.030 | 17.200 |
| 226A | 667. | 668. | 669. | 670. | 182 | 180 | 411 | 410 | 408 | 7.030 | 17.000 |
| 226A | 668. | 669. | 670. | 671. | 183 | 181 | 411 | 410 | 409 | 7.200 | 16.890 |
| 226A | 669. | 670. | 671. | 672. | 181 | 178 | 410 | 409 | 409 | 7.530 | 17.910 |
| 226A | 670. | 671. | 672. | 673. | 179 | 176 | 410 | 409 | 409 | 7.530 | 15.220 |
| 226A | 671. | 672. | 673. | 674. | 182 | 210 | 413 | 411 | 407 | 7.510 | 21.830 |
| 226A | 672. | 673. | 674. | 675. | 211 | 211 | 413 | 411 | 409 | 7.250 | 21.600 |
| 226A | 673. | 674. | 675. | 676. | 211 | 207 | 411 | 410 | 409 | 7.020 | 19.670 |
| 226A | 674. | 675. | 676. | 677. | 194 | 193 | 411 | 412 | 411 | 6.850 | 22.100 |
| 226A | 675. | 676. | 677. | 678. | 196 | 189 | 412 | 411 | 411 | 6.520 | 20.620 |
| 226A | 676. | 677. | 678. | 679. | 191 | 197 | 413 | 412 | 411 | 6.270 | 21.000 |
| 226A | 677. | 678. | 679. | 680. | 198 | 197 | 413 | 412 | 411 | 6.020 | 19.500 |
| 226A | 678. | 679. | 680. | 681. | 199 | 198 | 413 | 412 | 411 | 5.770 | 17.900 |
| 226A | 679. | 680. | 681. | 682. | 198 | 196 | 414 | 413 | 412 | 5.520 | 16.500 |
| 226A | 680. | 681. | 682. | 683. | 198 | 203 | 414 | 413 | 412 | 5.210 | 15.500 |
| 226A | 681. | 682. | 683. | 684. | 205 | 204 | 413 | 412 | 410 | 4.760 | 16.000 |
| 226A | 682. | 683. | 684. | 685. | 205 | 204 | 411 | 410 | 410 | 4.260 | 14.300 |
| 226A | 683. | 684. | 685. | 686. | 203 | 202 | 411 | 410 | 404 | 2.510 | 13.400 |
| 226A | 684. | 685. | 686. | 687. | 243 | 241 | 415 | 411 | | | |

ORIGINAL PAGE IS
OF POOR QUALITY

| DATE OF RUN | 15 08/27/76 | AVE-DIS | LOW-DIS | HIGH-CHAR | AVE-CHAR | LOW-CHAR | AHO | AHI |
|-------------|-------------|----------|---------|-----------|-----------|----------|-------|--------|
| PACK | DAY | HIGH-DIS | | | | | | |
| 226A | 947. | 1.263 | 1.262 | 1.412 | 1.411 | 1.410 | 1.500 | 11.600 |
| 226A | 1088. | 1.237 | 1.235 | 1.413 | 1.410 | 1.408 | 1.505 | 10.790 |
| 226A | 1089. | 1.220 | 1.218 | 1.411 | 1.410 | 1.407 | 2.507 | 12.000 |
| 226A | 1090. | 1.208 | 1.205 | 1.411 | 1.410 | 1.408 | 3.263 | 13.960 |
| 226A | 1092. | 1.197 | 1.194 | 1.413 | 1.411 | 1.410 | 4.267 | 17.250 |
| 226A | 1093. | 1.193 | 1.191 | 1.413 | 1.411 | 1.409 | 4.769 | 17.550 |
| 226A | 1094. | 1.190 | 1.188 | 1.410 | 1.410 | 1.409 | 5.020 | 17.090 |
| 226A | 1096. | 1.188 | 1.186 | 1.410 | 1.409 | 1.408 | 5.552 | 16.960 |
| 226A | 1098. | 1.177 | 1.175 | 1.410 | 1.409 | 1.408 | 6.021 | 16.480 |
| 226A | 1100. | 1.184 | 1.182 | 1.410 | 1.409 | 1.408 | 6.523 | 16.700 |
| 226A | 1101. | 1.178 | 1.177 | 1.411 | 1.409 | 1.409 | 6.965 | 17.620 |
| 226A | 1102. | 1.180 | 1.179 | 1.408 | 1.408 | 1.407 | 6.900 | 17.370 |
| 226A | 1104. | 1.183 | 1.182 | 1.411 | 1.410 | 1.409 | 7.028 | 18.460 |
| 226A | 1105. | 1.181 | 1.180 | 1.411 | 1.410 | 1.408 | 7.279 | 19.080 |
| 226A | 1106. | 1.182 | 1.181 | 1.411 | 1.410 | 1.409 | 7.278 | 19.000 |
| 226A | 1107. | 1.179 | 1.178 | 1.412 | 1.410 | 1.408 | 7.300 | 19.000 |
| 226A | 1109. | 1.211 | 1.209 | 1.412 | 1.410 | 1.408 | 7.530 | 17.920 |
| 226A | 1110. | 1.202 | 1.201 | 1.411 | 1.410 | 1.408 | 7.529 | 18.630 |
| 226A | 1112. | 1.196 | 1.195 | 1.411 | 1.410 | 1.408 | 7.278 | 18.650 |
| 226A | 1113. | 1.196 | 1.195 | 1.411 | 1.410 | 1.408 | 7.028 | 18.770 |
| 226A | 1114. | 1.195 | 1.194 | 1.414 | 1.411 | 1.409 | 7.029 | 18.800 |
| 226A | 1116. | 1.194 | 1.193 | 1.413 | 1.411 | 1.410 | 6.733 | 18.600 |
| 226A | 1117. | 1.199 | 1.199 | 1.410 | 1.410 | 1.408 | 6.620 | 18.400 |
| 226A | 1118. | 1.203 | 1.203 | 1.411 | 1.410 | 1.408 | 5.981 | 18.000 |
| 226A | 1120. | 1.207 | 1.206 | 1.411 | 1.410 | 1.409 | 5.498 | 17.460 |
| 226A | 1121. | 1.209 | 1.208 | 1.411 | 1.410 | 1.408 | 5.258 | 17.280 |
| 226A | 1123. | 1.214 | 1.213 | 1.410 | 1.409 | 1.407 | 4.660 | 16.650 |
| 226A | 1125. | 1.223 | 1.221 | 1.410 | 1.410 | 1.408 | 4.260 | 16.500 |
| 226A | 1126. | 1.230 | 1.229 | 1.410 | 1.410 | 1.408 | 3.580 | 15.530 |
| 226A | 1128. | 1.261 | 1.260 | 1.411 | 1.410 | 1.409 | 2.610 | 14.520 |
| 226A | 1129. | 1.267 | 1.266 | 1.411 | 1.410 | 1.407 | 1.430 | 13.800 |
| 1 | 00574 | 1.45000 | 1.70000 | 1.16700 | 1.4670000 | | | |
| 2 | 36066 | 22.50000 | 9.30000 | 1.43000 | 226.00000 | | | |

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ORIGINAL PAGE IS
OF POOR QUALITY

WQEC/C 77-134

DATE OF RUN IS 07/19/76
PACK DAY CURRENT

| | | |
|------|-------|------|
| 226A | 935. | .690 |
| 226A | 936. | .680 |
| 226A | 937. | .660 |
| 226A | 938. | .699 |
| 226A | 939. | .690 |
| 226A | 940. | .690 |
| 226A | 942. | .690 |
| 226A | 943. | .690 |
| 226A | 946. | .680 |
| 226A | 947. | .660 |
| 226A | 1088. | .440 |
| 226A | 1089. | .440 |
| 226A | 1090. | .440 |
| 226A | 1092. | .560 |
| 226A | 1093. | .560 |
| 226A | 1094. | .560 |
| 226A | 1096. | .560 |
| 226A | 1098. | .560 |
| 226A | 1100. | .560 |
| 226A | 1101. | .560 |
| 226A | 1102. | .560 |
| 226A | 1104. | .560 |
| 226A | 1105. | .560 |
| 226A | 1106. | .560 |
| 226A | 1107. | .560 |
| 226A | 1109. | .560 |
| 226A | 1110. | .560 |
| 226A | 1112. | .560 |
| 226A | 1113. | .610 |
| 226A | 1114. | .620 |
| 226A | 1116. | .620 |
| 226A | 1117. | .610 |
| 226A | 1118. | .610 |
| 226A | 1120. | .600 |
| 226A | 1121. | .600 |
| 226A | 1122. | .590 |
| 226A | 1123. | .580 |
| 226A | 1125. | .550 |
| 226A | 1126. | .530 |
| 226A | 1128. | .510 |
| 226A | 1129. | .510 |

1 .00902 .85000 33.90000 .38900 86.90000

2. Pack 226B, 5-cells

a. Cell information:

(1) Same as Pack 226A, Section V.F.1.a.(1) and (2)

(2) These cells are considered as flight cells as they are indicative of those cells which were launched in the ATS-6 satellite in May 1974. These cells were fabricated without electrolyte in 1971 and were stored dry in argon until they were activated in April 1973. They received acceptance tests at GSFC, 19.0 ah (25°C) and 15.5 ah (0°C), before being placed on a synchronous orbit test regime.

3. The cells were fitted with pressure transducers prior to testing at NAVWPNSUPPCEN Crane.

b. Parameters:

| | | | |
|--------------------------|------|---------------------|-------|
| Depth of Discharge (%) | 50 | Voltage Limit (v/c) | 1.410 |
| Charge Control | VL | Temperature (°C) | 20 |
| Charge Current (amps) | 1.50 | Float Voltage (v/c) | 1.410 |
| Discharge Current (amps) | 6.25 | | |

LOAD SHARING--Two additional discharges (13% and 20% DOD at the 1 ampere rate) during each day, of shadows 3 and 4.

SITE EXPERIMENT SIMULATION--Two discharges (30% and 43% DOD at the 2 ampere rate) per day during the sun periods following shadow 3.

c. Capacity Checks:

(1) Precycling and Shadow: (Discharge to .75 volts any cell or to an average of 1.00 volts per cell, whichever occurs first.)

| | Cell
1 | Cell
2 | Cell
3 | Cell
4 | Cell
5 | ah
out |
|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Precycling (Figure 197) | 18.8 | 18.8 | 18.8 | 19.0 | 18.9 | |
| Shadow 1 (Figure 198) | .527 | 1.007 | .976 | 1.058 | .956 | 19.28 |
| Shadow 2 (Figure 199) | .992 | .995 | .938 | 1.037 | .991 | 18.90 |
| Shadow 3* (Figure 200) | .982 | .998 | .967 | 1.034 | 1.019 | 17.18 |
| Shadow 4* (Figure 201) | .918 | .999 | .987 | 1.033 | 1.011 | 12.41 |

*--Load sharing during shadow and site experiment simulation prior to and following shadow period 4.

(2) Specials: (Discharge at 2.0 amperes to .75 volts any cell or to an average of 1.02 volts per cell, whichever occurs first.)

| | Cell
1 | Cell
2 | Cell
3 | Cell
4 | Cell
5 | ah
out |
|-----------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Special**cycle 639 (Figure 202) | 1.006 | 1.021 | .974 | 1.057 | 1.034 | 16.23 |
| Special***cycle 773 (Figure 203) | .984 | 1.016 | 1.013 | 1.054 | 1.028 | 14.16 |
| Special****cycle 863 (Figure 204) | .925 | 1.007 | 1.004 | 1.052 | 1.018 | 12.66 |

**--Prior to shadow 4, following 28 days on SITE EXPERIMENT SIMULATION.

***--Following shadow 4, after 3 days of float at VL.

****--Following special capacity check, cycle 773 above, after 45 days on SITE EXPERIMENT SIMULATION.

d. Test results during Eclipse Seasons: (Figures 205 to 207)

(1) End of Discharge Voltages: Effect of the reconditioning of the pack, due to the capacity check, can be seen for each season.

(2) End of Charge Currents: Values began to increase at the start of shadow 3 due to the initiation of the load sharing test. The sudden drop in current (day 523) was due to the pack taken off the load sharing, for that day, because it had been discharged 5 hours to long the day before.

(3) Pressures at End of Charge: Pressure values remained at 0 psia for all cells during the first 3 shadow periods; but there is a possibility that this may have been due to a hardware problem (loose wire on transducer excitation voltage). Pressures were in the range of 11 to 15 psia during shadow 4.

(4) The amperes hours out values, for shadows 3 and 4, do not include the ampere hours out during the load sharing discharges.

(5) The days listed for shadows 3 and 4 are not the actual calendar days the pack has been on test; as each discharge is considered a day for record keeping purposes, and this pack receives 2 discharges a day during its sun period.

e. Performance during Sun Periods: The pack began test with a sun period and has completed 5 of these periods. After one month, following shadow 3, the pack began a Site Experiment Simulation in which it received 2 discharges a day during the sun periods. Pressures during the first 4 periods were 0 psia; but this could have been due to a hardware problem. The range has been 11 to 15 psia during period 5. Following is a listing of the high, average and low cell voltages and current (amps) at the start and end of sun periods 1 through 5.

| Sun Periods | | | | | | | | | |
|------------------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|--|
| | 1 | | 2 | | 3 | | 4 | | |
| <u>Voltages*</u> | <u>Start</u> | <u>End</u> | <u>Start</u> | <u>End</u> | <u>Start</u> | <u>End</u> | <u>Start</u> | <u>End</u> | |
| High | 1.411(2,4,5) | 1.414(5) | 1.412(5) | 1.412(5) | 1.414(5) | 1.413(5) | 1.412(5) | 1.412(2,3, | |
| Average | 1.410 | 1.411 | 1.410 | 1.410 | 1.412 | 1.409 | 1.409 | 1.411 | |
| Low | 1.408(1) | 1.410(1) | 1.408(3) | 1.408(3) | 1.411(1,3) | 1.403(1) | 1.407(1) | 1.409(1) | |
| Current | .22 | .33 | .53 | .53 | .58 | .49 | .53 | .57 | |
| | 5 | | | | | | | | |
| <u>Voltages*</u> | <u>Start</u> | <u>End</u> | | | | | | | |
| High | 1.411(3,4,5) | 1.410(2,5) | | | | | | | |
| Average | 1.410 | 1.409 | | | | | | | |
| Low | 1.409(1,2) | 1.408(3) | | | | | | | |
| Current | .65 | .57 | | | | | | | |

Note: End values on period 4 are at completion of Site Experiment Simulation cycle.

WQEC/C 77-134

AMPERE HOUR OUT

PACK NUMBER IS 268
PRE-CYCLING: 20 DEGREES
CYCLE NUMBER IS 2
DISCHARGE RATE IS 6.25

00 2.08 5.21 8.33 11.46 14.58 17.71
10 3.13 6.25 9.38 12.50 15.63 18.75
1.04 4.17 7.29 10.42 13.54 16.67

KEY HIGH CELL
+ LOW CELL
* AVERAGE

C A P A C I T Y C E L L V O L T A G E S C A L E

00 57 54 51 48 45 42 39 37 34 32 30 28 26 24 22 20 18 16 14 12 10 08 06 04 02 99 96 93 90 87 84 81 78 75 72 69 66 63 60 57 54 51 48 45 42 39 37 34 32 30 28 26 24 22 20 18 16 14 12 10 08 06 04 02

1. 21. 31. 51. 61. 81. 111. 141. 171.
2. 11. 41. 71. 101. 131. 161.

TIME IN MINUTES
CELLS INCLUDED V1 V2 V3 V4 V5

FIGURE 197

KEY
 * HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 226B
 SHADOW PERIOD IS 1
 CYCLE NUMBER IS 134
 DISCHARGE RATE IS 6.25

WQEC/C 77-134

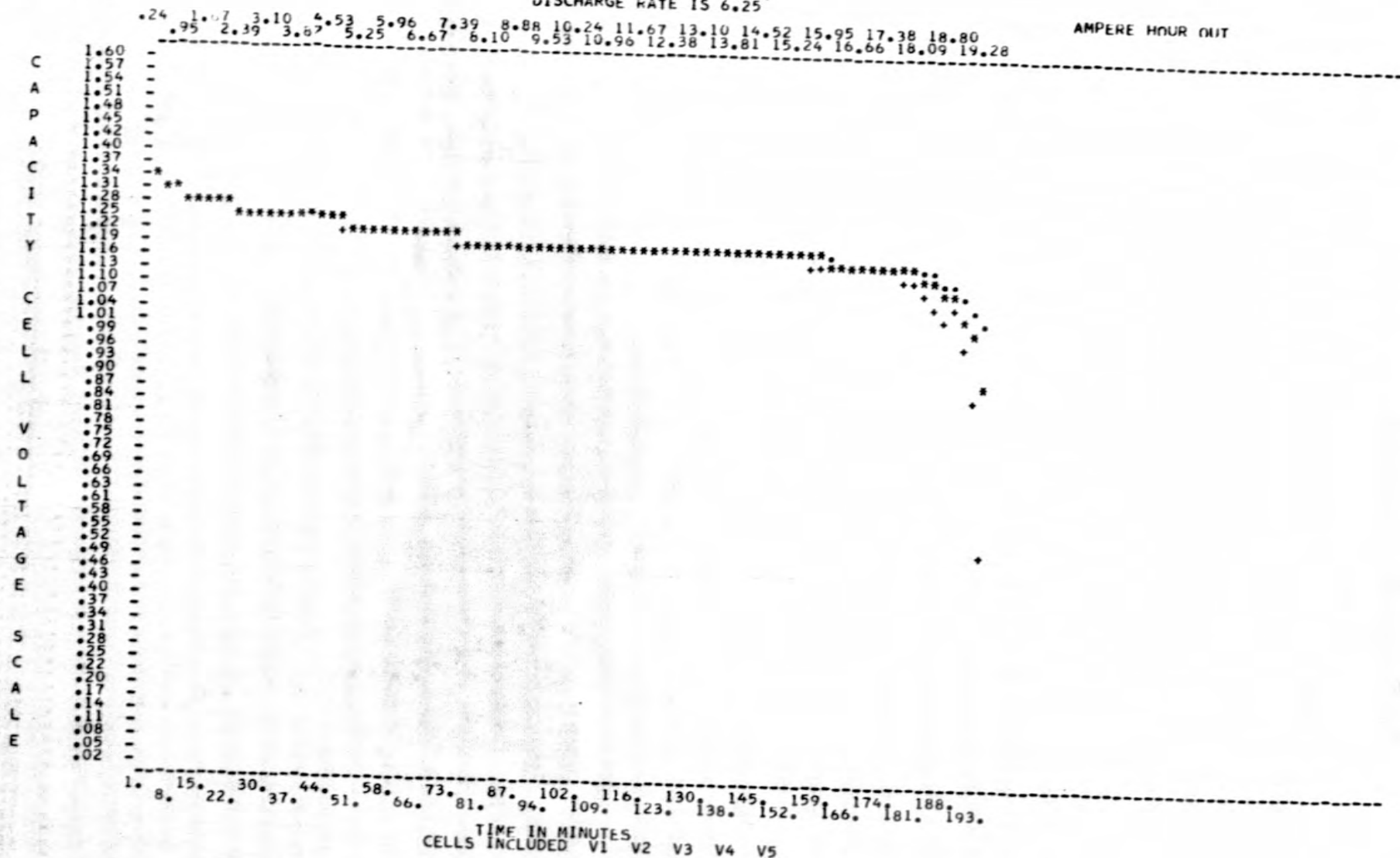


FIGURE 198

ORIGINAL PAGE IS
 OF POOR QUALITY

ORIGINAL PAGE IS
 OF POOR QUALITY

MOEC/C 77-134

AMPERE HOUR OUT

PACK NUMBER IS 226B
SHADOW PERIOD IS 2
CYCLE NUMBER IS 253
DISCHARGE RATE IS 6.23

1.00 3.00 5.20 7.40 9.60 11.80 14.00 16.20 18.40 20.60
2.00 4.20 6.40 8.60 10.80 13.00 15.20 17.40 19.60 21.80
3.00 5.20 7.40 9.60 11.80 14.00 16.20 18.40 20.60 22.80
4.00 6.20 8.40 10.60 12.80 15.00 17.20 19.40 21.60 23.80
5.00 7.20 9.40 11.60 13.80 16.00 18.20 20.40 22.60 24.80
6.00 8.20 10.40 12.60 14.80 17.00 19.20 21.40 23.60 25.80
7.00 9.20 11.40 13.60 15.80 18.00 20.20 22.40 24.60 26.80
8.00 10.20 12.40 14.60 16.80 19.00 21.20 23.40 25.60 27.80
9.00 11.20 13.40 15.60 17.80 20.00 22.20 24.40 26.60 28.80
10.00 12.20 14.40 16.60 18.80 21.00 23.20 25.40 27.60 29.80
11.00 13.20 15.40 17.60 19.80 22.00 24.20 26.40 28.60 30.80
12.00 14.20 16.40 18.60 20.80 23.00 25.20 27.40 29.60 31.80
13.00 15.20 17.40 19.60 21.80 24.00 26.20 28.40 30.60 32.80
14.00 16.20 18.40 20.60 22.80 25.00 27.20 29.40 31.60 33.80
15.00 17.20 19.40 21.60 23.80 26.00 28.20 30.40 32.60 34.80
16.00 18.20 20.40 22.60 24.80 27.00 29.20 31.40 33.60 35.80
17.00 19.20 21.40 23.60 25.80 28.00 30.20 32.40 34.60 36.80
18.00 20.20 22.40 24.60 26.80 29.00 31.20 33.40 35.60 37.80
19.00 21.20 23.40 25.60 27.80 30.00 32.20 34.40 36.60 38.80
20.00 22.20 24.40 26.60 28.80 31.00 33.20 35.40 37.60 39.80
21.00 23.20 25.40 27.60 29.80 32.00 34.20 36.40 38.60 40.80
22.00 24.20 26.40 28.60 30.80 33.00 35.20 37.40 39.60 41.80
23.00 25.20 27.40 29.60 31.80 34.00 36.20 38.40 40.60 42.80
24.00 26.20 28.40 30.60 32.80 35.00 37.20 39.40 41.60 43.80
25.00 27.20 29.40 31.60 33.80 36.00 38.20 40.40 42.60 44.80
26.00 28.20 30.40 32.60 34.80 37.00 39.20 41.40 43.60 45.80
27.00 29.20 31.40 33.60 35.80 38.00 40.20 42.40 44.60 46.80
28.00 30.20 32.40 34.60 36.80 39.00 41.20 43.40 45.60 47.80
29.00 31.20 33.40 35.60 37.80 40.00 42.20 44.40 46.60 48.80
30.00 32.20 34.40 36.60 38.80 41.00 43.20 45.40 47.60 49.80
31.00 33.20 35.40 37.60 39.80 42.00 44.20 46.40 48.60 50.80
32.00 34.20 36.40 38.60 40.80 43.00 45.20 47.40 49.60 51.80
33.00 35.20 37.40 39.60 41.80 44.00 46.20 48.40 50.60 52.80
34.00 36.20 38.40 40.60 42.80 45.00 47.20 49.40 51.60 53.80
35.00 37.20 39.40 41.60 43.80 46.00 48.20 50.40 52.60 54.80
36.00 38.20 40.40 42.60 44.80 47.00 49.20 51.40 53.60 55.80
37.00 39.20 41.40 43.60 45.80 48.00 50.20 52.40 54.60 56.80
38.00 40.20 42.40 44.60 46.80 49.00 51.20 53.40 55.60 57.80
39.00 41.20 43.40 45.60 47.80 50.00 52.20 54.40 56.60 58.80
40.00 42.20 44.40 46.60 48.80 51.00 53.20 55.40 57.60 59.80
41.00 43.20 45.40 47.60 49.80 52.00 54.20 56.40 58.60 60.80
42.00 44.20 46.40 48.60 50.80 53.00 55.20 57.40 59.60 61.80
43.00 45.20 47.40 49.60 51.80 54.00 56.20 58.40 60.60 62.80
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54.00 56.20 58.40 60.60 62.80 65.00 67.20 69.40 71.60 73.80
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56.00 58.20 60.40 62.60 64.80 67.00 69.20 71.40 73.60 75.80
57.00 59.20 61.40 63.60 65.80 68.00 70.20 72.40 74.60 76.80
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60.00 62.20 64.40 66.60 68.80 71.00 73.20 75.40 77.60 79.80
61.00 63.20 65.40 67.60 69.80 72.00 74.20 76.40 78.60 80.80
62.00 64.20 66.40 68.60 70.80 73.00 75.20 77.40 79.60 81.80
63.00 65.20 67.40 69.60 71.80 74.00 76.20 78.40 80.60 82.80
64.00 66.20 68.40 70.60 72.80 75.00 77.20 79.40 81.60 83.80
65.00 67.20 69.40 71.60 73.80 76.00 78.20 80.40 82.60 84.80
66.00 68.20 70.40 72.60 74.80 77.00 79.20 81.40 83.60 85.80
67.00 69.20 71.40 73.60 75.80 78.00 80.20 82.40 84.60 86.80
68.00 70.20 72.40 74.60 76.80 79.00 81.20 83.40 85.60 87.80
69.00 71.20 73.40 75.60 77.80 80.00 82.20 84.40 86.60 88.80
70.00 72.20 74.40 76.60 78.80 81.00 83.20 85.40 87.60 89.80
71.00 73.20 75.40 77.60 79.80 82.00 84.20 86.40 88.60 90.80
72.00 74.20 76.40 78.60 80.80 83.00 85.20 87.40 89.60 91.80
73.00 75.20 77.40 79.60 81.80 84.00 86.20 88.40 90.60 92.80
74.00 76.20 78.40 80.60 82.80 85.00 87.20 89.40 91.60 93.80
75.00 77.20 79.40 81.60 83.80 86.00 88.20 90.40 92.60 94.80
76.00 78.20 80.40 82.60 84.80 87.00 89.20 91.40 93.60 95.80
77.00 79.20 81.40 83.60 85.80 88.00 90.20 92.40 94.60 96.80
78.00 80.20 82.40 84.60 86.80 89.00 91.20 93.40 95.60 97.80
79.00 81.20 83.40 85.60 87.80 90.00 92.20 94.40 96.60 98.80
80.00 82.20 84.40 86.60 88.80 91.00 93.20 95.40 97.60 99.80
81.00 83.20 85.40 87.60 89.80 92.00 94.20 96.40 98.60 100.80
82.00 84.20 86.40 88.60 90.80 93.00 95.20 97.40 99.60 101.80
83.00 85.20 87.40 89.60 91.80 94.00 96.20 98.40 100.60 102.80
84.00 86.20 88.40 90.60 92.80 95.00 97.20 99.40 101.60 103.80
85.00 87.20 89.40 91.60 93.80 96.00 98.20 100.40 102.60 104.80
86.00 88.20 90.40 92.60 94.80 97.00 99.20 101.40 103.60 105.80
87.00 89.20 91.40 93.60 95.80 98.00 100.20 102.40 104.60 106.80
88.00 90.20 92.40 94.60 96.80 99.00 101.20 103.40 105.60 107.80
89.00 91.20 93.40 95.60 97.80 100.00 102.20 104.40 106.60 108.80
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92.00 94.20 96.40 98.60 100.80 103.00 105.20 107.40 109.60 111.80
93.00 95.20 97.40 99.60 101.80 104.00 106.20 108.40 110.60 112.80
94.00 96.20 98.40 100.60 102.80 105.00 107.20 109.40 111.60 113.80
95.00 97.20 99.40 101.60 103.80 106.00 108.20 110.40 112.60 114.80
96.00 98.20 100.40 102.60 104.80 107.00 109.20 111.40 113.60 115.80
97.00 99.20 101.40 103.60 105.80 108.00 110.20 112.40 114.60 116.80
98.00 100.20 102.40 104.60 106.80 109.00 111.20 113.40 115.60 117.80
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128.00 130.20 132.40 134.60 136.80 139.00 141.20 143.40 145.60 147.80
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133.00 135.20 137.40 139.60 141.80 144.00 146.20 148.40 150.60 152.80
134.00 136.20 138.40 140.60 142.80 145.00 147.20 149.40 151.60 153.80
135.00 137.20 139.40 141.60 143.80 146.00 148.20 150.40 152.60 154.80
136.00 138.20 140.40 142.60 144.80 147.00 149.20 151.40 153.60 155.80
137.00 139.20 141.40 143.60 145.80 148.00 150.20 152.40 154.60 156.80
138.00 140.20 142.40 144.60 146.80 149.00 151.20 153.40 155.60 157.80
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155.00 157.20 159.40 161.60 164.80 166.00 168.20 170.40 172.60 174.80
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161.00 163.20 165.40 167.60 170.80 172.00 174.20 176.40 178.60 180.80
162.00 164.20 166.40 168.60 171.80 173.00 175.20 177.40 179.60 181.80
163.00 165.20 167.40 169.60 172.80 174.00 176.20 178.40 180.60 182.80
164.00 166.20 168.40 170.60 173.80 175.00 177.20 179.40 181.60 183.80
165.00 167.20 169.40 171.60 174.80 176.00 178.20 180.40 182.60 184.80
166.00 168.20 170.40 172.60 175.80 177.00 179.20 181.40 183.60 185.80
167.00 169.20 171.40 173.60 176.80 178.00 180.20 182.40 184.60 186.80
168.00 170.20 172.40 174.60 177.80 179.00 181.20 183.40 185.60 187.80
169.00 171.20 173.40 175.60 178.80 180.00 182.20 184.40 186.60 188.80
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171.00 173.20 175.40 177.60 180.80 182.00 184.20 186.40 188.60 190.80
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174.00 176.20 178.40 180.60 183.80 185.00 187.20 189.40 191.60 193.80
175.00 177.20 179.40 181.60 184.80 186.00 188.20 190.40 192.60 194.80
176.00 178.20 180.40 182.60 185.80 187.00 189.20 191.40 193.60 195.80
177.00 179.20 181.40 183.60 186.80 188.00 190.20 192.40 194.60 196.80
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181.00 183.20 185.40 187.60 190.80 192.00 194.20 196.40 198.60 200.80
182.00 184.20 186.40 188.60 191.80 193.00 195.20 197.40 199.60 201.80
183.00 185.20 187.40 189.60 192.80 194.00 196.20 198.40 200.60 202.80
184.00 186.20 188.40 190.60 193.80 195.00 197.20 199.40 201.60 203.80
185.00 187.20 189.40 191.60 194.80 196.00 198.20 200.40 202

KEY
 * HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 226B
 SHADOW PERIOD IS 3
 CYCLE NUMBER IS 533
 DISCHARGE RATE IS 6.25

WQEC/C 77-134

AMPERE HOUR OUT

.25 1.73 3.95 5.67 6.41 7.15 8.13 9.85 11.32 12.78 14.98 17.18
 .49 2.47 4.69 5.92 6.66 7.39 8.37 10.58 11.81 13.51 15.71
 .99 3.21 5.43 6.16 6.90 7.64 9.11 10.83 12.05 14.25 16.44

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-10
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-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
-170
-180
-190
-200
-210
-220
-230
-240
-250
-260
-270
-280
-290
-300
-310
-320
-330
-340
-350
-360
-370
-380
-390
-400
-410
-420
-430
-440
-450
-460
-470
-480
-490
-500
-510
-520
-530
-540
-550
-560
-570
-580
-590
-600
-610
-620
-630
-640
-650
-660
-670
-680
-690
-700
-710
-720
-730
-740
-750
-760
-770
-780
-790
-800
-810
-820
-830
-840
-850
-860
-870
-880
-890
-900
-910
-920
-930
-940
-950
-960
-970
-980
-990
-1000
-1010
-1020
-1030
-1040
-1050
-1060
-1070
-1080
-1090
-1100
-1110
-1120
-1130
-1140
-1150
-1160
-1170
-1180
-1190
-1200
-1210
-1220
-1230
-1240
-1250
-1260
-1270
-1280
-1290
-1300
-1310
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KEY
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PACK NUMBER IS 2268
 SHADOW PERIOD IS 4
 CYCLE NUMBER IS 768
 DISCHARGE RATE IS 6.25

AMPERE HOUR OUT WQEC/C 77-134

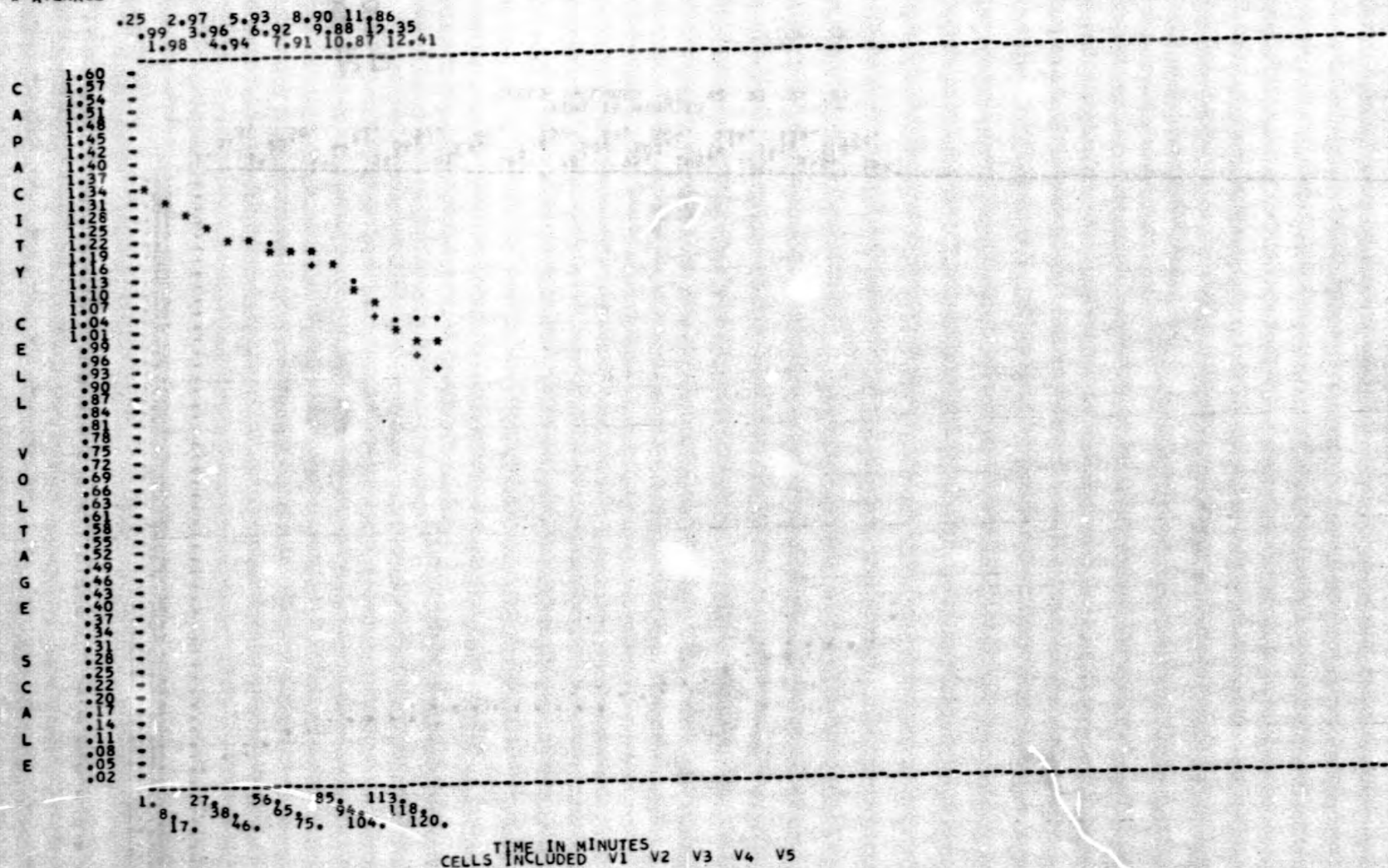


FIGURE 201

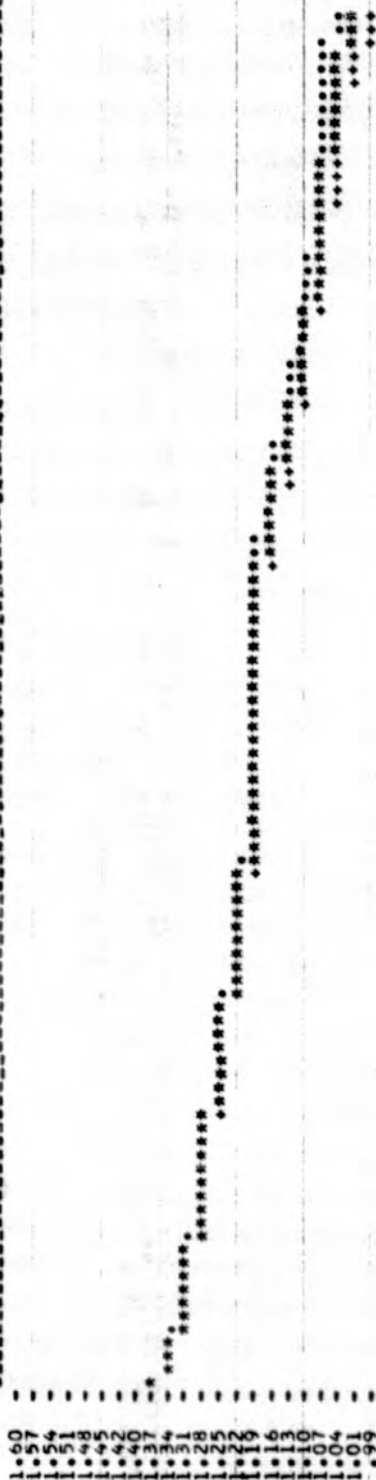
KEITH CELL
* HIGH CELL
* LOW CELL
* AVERAGE

PACK NUMBER IS 226B
SPECIAL NUMBER IS 639.
CYCLE DISCHARGE RATE IS 2.0

WQEC/C 77-134

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1. 30. 59. 73. 102. 131. 160. 189. 217. 246. 275. 304. 333. 361. 390. 419. 448. 478. 507. 536. 565. 594. 623. 652. 681. 710. 739. 768. 797. 826. 855. 884. 913. 942. 971. 1000. 1029. 1058. 1087. 1116. 1145. 1174. 1203. 1232. 1261. 1290. 1319. 1348. 1377. 1406. 1435. 1464. 1493. 1522. 1551. 1580. 1609. 1638. 1667. 1696. 1725. 1754. 1783. 1812. 1841. 1870. 1899. 1928. 1957. 1986. 2015. 2044. 2073. 2102. 2131. 2160. 2189. 2218. 2247. 2276. 2305. 2334. 2363. 2392. 2421. 2450. 2479. 2508. 2537. 2566. 2595. 2624. 2653. 2682. 2711. 2740. 2769. 2798. 2827. 2856. 2885. 2914. 2943. 2972. 3001. 3030. 3059. 3088. 3117. 3146. 3175. 3204. 3233. 3262. 3291. 3320. 3349. 3378. 3407. 3436. 3465. 3494. 3523. 3552. 3581. 3610. 3639. 3668. 3697. 3726. 3755. 3784. 3813. 3842. 3871. 3900. 3929. 3958. 3987. 4016. 4045. 4074. 4103. 4132. 4161. 4190. 4219. 4248. 4277. 4306. 4335. 4364. 4393. 4422. 4451. 4480. 4509. 4538. 4567. 4596. 4625. 4654. 4683. 4712. 4741. 4770. 4799. 4828. 4857. 4886. 4915. 4944. 4973. 5002. 5031. 5060. 5089. 5118. 5147. 5176. 5205. 5234. 5263. 5292. 5321. 5350. 5379. 5408. 5437. 5466. 5495. 5524. 5553. 5582. 5611. 5640. 5669. 5698. 5727. 5756. 5785. 5814. 5843. 5872. 5901. 5930. 5959. 5988. 6017. 6046. 6075. 6104. 6133. 6162. 6191. 6220. 6249. 6278. 6307. 6336. 6365. 6394. 6423. 6452. 6481. 6510. 6539. 6568. 6597. 6626. 6655. 6684. 6713. 6742. 6771. 6800. 6829. 6858. 6887. 6916. 6945. 6974. 7003. 7032. 7061. 7090. 7119. 7148. 7177. 7206. 7235. 7264. 7293. 7322. 7351. 7380. 7409. 7438. 7467. 7496. 7525. 7554. 7583. 7612. 7641. 7670. 7699. 7728. 7757. 7786. 7815. 7844. 7873. 7902. 7931. 7960. 7989. 8018. 8047. 8076. 8105. 8134. 8163. 8192. 8221. 8250. 8279. 8308. 8337. 8366. 8395. 8424. 8453. 8482. 8511. 8540. 8569. 8598. 8627. 8656. 8685. 8714. 8743. 8772. 8801. 8830. 8859. 8888. 8917. 8946. 8975. 9004. 9033. 9062. 9091. 9120. 9149. 9178. 9207. 9236. 9265. 9294. 9323. 9352. 9381. 9410. 9439. 9468. 9497. 9526. 9555. 9584. 9613. 9642. 9671. 9700. 9729. 9758. 9787. 9816. 9845. 9874. 9903. 9932. 9961. 9990. 10019. 10048. 10077. 10106. 10135. 10164. 10193. 10222. 10251. 10280. 10309. 10338. 10367. 10396. 10425. 10454. 10483. 10512. 10541. 10570. 10599. 10628. 10657. 10686. 10715. 10744. 10773. 10802. 10831. 10860. 10889. 10918. 10947. 10976. 11005. 11034. 11063. 11092. 11121. 11150. 11179. 11208. 11237. 11266. 11295. 11324. 11353. 11382. 11411. 11440. 11469. 11498. 11527. 11556. 11585. 11614. 11643. 11672. 11701. 11730. 11759. 11788. 11817. 11846. 11875. 11904. 11933. 11962. 11991. 12020. 12049. 12078. 12107. 12136. 12165. 12194. 12223. 12252. 12281. 12310. 12339. 12368. 12397. 12426. 12455. 12484. 12513. 12542. 12571. 12600. 12629. 12658. 12687. 12716. 12745. 12774. 12803. 12832. 12861. 12890. 12919. 12948. 12977. 13006. 13035. 13064. 13093. 13122. 13151. 13180. 13209. 13238. 13267. 13296. 13325. 13354. 13383. 13412. 13441. 13470. 13499. 13528. 13557. 13586. 13615. 13644. 13673. 13702. 13731. 13760. 13789. 13818. 13847. 13876. 13905. 13934. 13963. 13992. 14021. 14050. 14079. 14108. 14137. 14166. 14195. 14224. 14253. 14282. 14311. 14340. 14369. 14398. 14427. 14456. 14485. 14514. 14543. 14572. 14601. 14630. 14659. 14688. 14717. 14746. 14775. 14804. 14833. 14862. 14891. 14920. 14949. 14978. 15007. 15036. 15065. 15094. 15123. 15152. 15181. 15210. 15239. 15268. 15297. 15326. 15355. 15384. 15413. 15442. 15471. 15500. 15529. 15558. 15587. 15616. 15645. 15674. 15703. 15732. 15761. 15790. 15819. 15848. 15877. 15906. 15935. 15964. 15993. 16022. 16051. 16080. 16109. 16138. 16167. 16196. 16225. 16254. 16283. 16312. 16341. 16370. 16399. 16428. 16457. 16486. 16515. 16544. 16573. 16602. 16631. 16660. 16689. 16718. 16747. 16776. 16805. 16834. 16863. 16892. 16921. 16950. 16979. 17008. 17037. 17066. 17095. 17124. 17153. 17182. 17211. 17240. 17269. 17298. 17327. 17356. 17385. 17414. 17443. 17472. 17501. 17530. 17559. 17588. 17617. 17646. 17675. 17704. 17733. 17762. 17791. 17820. 17849. 17878. 17907. 17936. 17965. 17994. 18023. 18052. 18081. 18110. 18139. 18168. 18197. 18226. 18255. 18284. 18313. 18342. 18371. 18400. 18429. 18458. 18487. 18516. 18545. 18574. 18603. 18632. 18661. 18690. 18719. 18748. 18777. 18806. 18835. 18864. 18893. 18922. 18951. 18980. 19009. 19038. 19067. 19096. 19125. 19154. 19183. 19212. 19241. 19270. 19299. 19328. 19357. 19386. 19415. 19444. 19473. 19502. 19531. 19560. 19589. 19618. 19647. 19676. 19705. 19734. 19763. 19792. 19821. 19850. 19879. 19908. 19937. 19966. 19995. 20024. 20053. 20082. 20111. 20140. 20169. 20198. 20227. 20256. 20285. 20314. 20343. 20372. 20401. 20430. 20459. 20488. 20517. 20546. 20575. 20604. 20633. 20662. 20691. 20720. 20749. 20778. 20807. 20836. 20865. 20894. 20923. 20952. 20981. 21010. 21039. 21068. 21097. 21126. 21155. 21184. 21213. 21242. 21271. 21300. 21329. 21358. 21387. 21416. 21445. 21474. 21503. 21532. 21561. 21590. 21619. 21648. 21677. 21706. 21735. 21764. 21793. 21822. 21851. 21880. 21909. 21938. 21967. 21996. 22025. 22054. 22083. 22112. 22141. 22170. 22199. 22228. 22257. 22286. 22315. 22344. 22373. 22402. 22431. 22460. 22489. 22518. 22547. 22576. 22605. 22634. 22663. 22692. 22721. 22750. 22779. 22808. 22837. 22866. 22895. 22924. 22953. 22982. 23011. 23040. 23069. 23098. 23127. 23156. 23185. 23214. 23243. 23272. 23301. 23330. 23359. 23388. 23417. 23446. 23475. 23504. 23533. 23562. 23591. 23620. 23649. 23678. 23707. 23736. 23765. 23794. 23823. 23852. 23881. 23910. 23939. 23968. 23997. 24026. 24055. 24084. 24113. 24142. 24171. 24200. 24229. 24258. 24287. 24316. 24345. 24374. 24403. 24432. 24461. 24490. 24519. 24548. 24577. 24606. 24635. 24664. 24693. 24722. 24751. 24780. 24809. 24838. 24867. 24896. 24925. 24954. 24983. 25012. 25041. 25070. 25099. 25128. 25157. 25186. 25215. 25244. 25273. 25302. 25331. 25360. 25389. 25418. 25447. 25476. 25505. 25534. 25563. 25592. 25621. 25650. 25679. 25708. 25737. 25766. 25795. 25824. 25853. 25882. 25911. 25940. 25969. 25998. 26027. 26056. 26085. 26114. 26143. 26172. 26201. 26230. 26259. 26288. 26317. 26346. 26375. 26404. 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30580. 30609. 30638. 30667. 30696. 30725. 30754. 30783. 30812. 30841. 30870. 30899. 30928. 30957. 30986. 31015. 31044. 31073. 31102. 31131. 31160. 31189. 31218. 31247. 31276. 31305. 31334. 31363. 31392. 31421. 31450. 31479. 31508. 31537. 31566. 31595. 31624. 31653. 31682. 31711. 31740. 31769. 31798. 31827. 31856. 31885. 31914. 31943. 31972. 32001. 32030. 32059. 32088. 32117. 32146. 32175. 32204. 32233. 32262. 32291. 32320. 32349. 32378. 32407. 32436. 32465. 32494. 32523. 32552. 32581. 32610. 32639. 32668. 32697. 32726. 32755. 32784. 32813. 32842. 32871. 32900. 32929. 32958. 32987. 33016. 33045. 33074. 33103. 33132. 33161. 33190. 33219. 33248. 33277. 33306. 33335. 33364. 33393. 33422. 33451. 33480. 33509. 33538. 33567. 33596. 33625. 33654. 33683. 33712. 33741. 33770. 33799. 33828. 33857. 33886. 33915. 33944. 33973. 34002. 34031. 34060. 34089. 34118. 34147. 34176. 34205. 34234. 34263. 34292. 34321. 34350. 34379. 34408. 34437. 34466. 34495. 34524. 34553. 34582. 34611. 34640. 34669. 34698. 34727. 34756. 34785. 34814. 34843. 34872. 34901. 34930. 34959. 34988. 35017. 35046. 35075. 35104. 35133. 35162. 35191. 35220. 35249. 35278. 35307. 35336. 35365. 35394. 35423. 35452. 35481. 35510. 35539. 35568. 35597. 35626. 35655. 35684. 35713. 35742. 35771. 35800. 35829. 35858. 35887. 35916. 35945. 35974. 36003. 36032. 36061. 36090. 36119. 36148. 36177. 36206. 36235. 36264. 36293. 36322. 36351. 36380. 36409. 36438. 36467. 36496. 36525. 36554. 36583. 36612. 36641. 36670. 36699. 36728. 36757. 36786. 36815. 36844. 36873. 36902. 36931. 36960. 36989. 37018. 37047. 37076. 37105. 37134. 37163. 37192. 37221. 37250. 37279. 37308. 37337. 37366. 37395. 37424. 37453. 37482. 37511. 37540. 37569. 37598. 37627. 37656. 37685. 37714. 37743. 37772. 37801. 37830. 37859. 37888. 37917. 37946. 37975. 38004. 38033. 38062. 38091. 38120. 38149. 38178. 38207. 38236. 38265. 38294. 38323. 38352. 38381. 38410. 38439. 38468. 38497. 38526. 38555. 38584. 38613. 38642. 38671. 38700. 38729. 38758. 38787. 38816. 38845. 38874. 38903. 38932. 38961. 38990. 39019. 39048. 39077. 39106. 39135. 39164. 39193. 39222. 39251. 39280. 39309. 39338. 39367. 39396. 39425. 39454. 39483. 39512. 39541. 39570. 39599. 39628. 39657. 39686. 39715. 39744. 39773. 39802. 39831. 39860. 39889. 39918. 39947. 39976. 40005. 40034. 40063. 40092. 40121. 40150. 40179. 40208. 40237. 40266. 40295. 40324. 40353. 40382. 40411. 40440. 40469. 40498. 40527. 40556. 40585. 40614. 40643. 40672. 40701. 40730. 40759. 40788. 40817. 40846. 40875. 40904. 40933. 40962. 40991. 41020. 41049. 41078. 41107. 41136. 41165. 41194. 41223. 41252. 41281. 41310. 41339. 41368. 41397. 41426. 41455. 41484. 41513. 41542. 41571. 41600. 41629. 41658. 41687. 41716. 41745. 41774. 41803. 41832. 41861. 41890. 41919. 41948. 41977. 42006. 42035. 42064. 42093. 42122. 42151. 42180. 42209. 42238. 42267. 42296. 42325. 42354. 42383. 42412. 42441. 42470. 42499. 42528. 42557. 42586. 42615. 42644. 42673. 42702. 42731. 42760. 42789. 42818. 42847. 42876. 42905. 42934. 42963. 42992. 43021. 43050. 43079. 43108. 43137. 43166. 43195. 43224. 43253. 43282. 43311. 43340. 43369. 43398. 43427. 43456. 43485. 43514. 43543. 43572. 43601. 43630. 43659. 43688. 43717. 43746. 43775. 43804. 43833. 43862. 43891. 43920. 43949. 43978. 44007. 44036. 44065. 44094. 44123. 44152. 44181. 44210. 44239. 44268. 44297. 44326. 44355. 44384. 44413. 44442. 44471. 44500. 44529. 44558. 44587. 44616. 44645. 44674. 44703. 44732. 44761. 44790. 44819. 44848. 44877. 44906. 44935. 44964. 44993. 45022. 45051. 45080. 45109. 45138. 45167. 45196. 45225. 45254. 45283. 45312. 45341. 45370. 45399. 45428. 45457. 45486. 45515. 45544. 45573. 45602. 45631. 45660. 45689. 45718. 45747. 45776. 45805. 45834. 45863. 45892. 45921. 45950. 45979. 46008. 46037. 46066. 46095. 46124. 46153. 46182. 46211. 46240. 46269. 46298. 46327. 46356. 46385. 46414. 46443. 46472. 46501. 46530. 46559. 46588. 46617. 46646. 46675. 46704. 46733. 46762. 46791. 46820. 46849. 46878. 46907. 46936. 46965. 46994. 47023. 47052. 47081. 47110. 47139. 47168. 47197. 47226. 47255. 47284. 47313. 47342. 47371. 47400. 47429. 47458. 47487. 47516. 47545. 47574. 47603. 47632. 47661. 47690. 47719. 47748. 47777. 47806. 47835. 47864. 47893. 47922. 47951. 47980. 48009. 48038. 48067. 48096. 48125. 48154. 48183. 48212. 48241. 48270. 48299. 48328. 48357. 48386. 48415. 48444. 48473. 48502. 48531. 48560. 48589. 48618. 48647. 48676. 48705. 48734. 48763. 48792. 48821. 48850. 48879. 48908. 48937. 48966. 48995. 49024. 49053. 49082. 49111. 49140. 49169. 49198. 49227. 49256. 49285. 49314. 49343. 49372. 49401. 49430. 49459. 49488. 49517. 49546. 49575. 49604. 49633. 49662. 49691. 49720. 49749. 49778. 49807. 49836. 49865. 49894. 49923. 49952. 49981. 50010. 50039. 50068. 50097.

KEY
 * HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 226B
 SPECIAL
 CYCLE NUMBER IS 773
 DISCHARGE RATE IS 2.0

WQEC/C 77-134

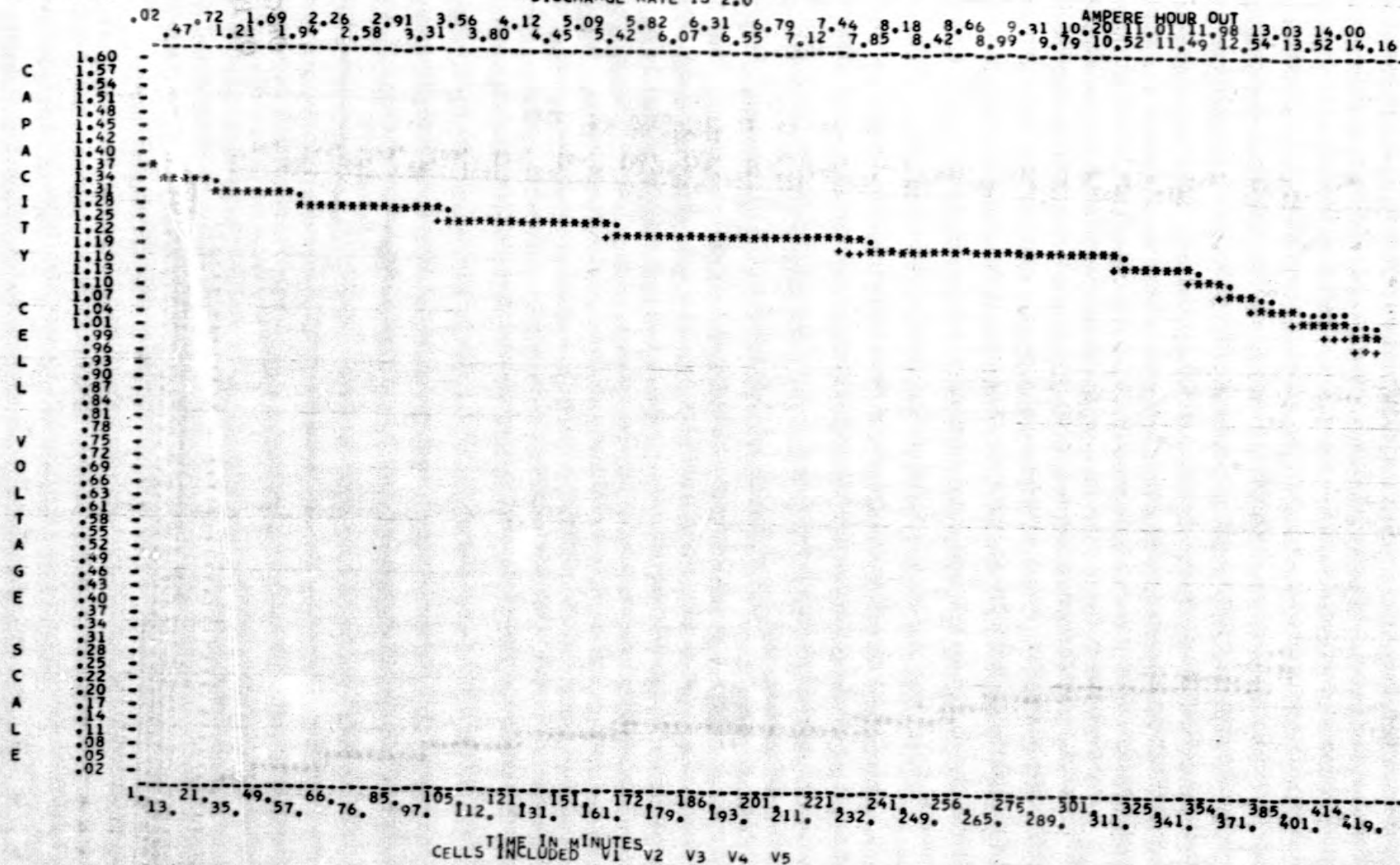


FIGURE 203

KEY
 * HIGH CELL
 + LOW CELL
 * AVERAGE

PACK NUMBER IS 226B
 SPECIAL
 CYCLE NUMBER IS 863
 DISCHARGE RATE IS 2.0

WQEC/C 77-134

AMPERE HOUR OUT
 1.00 .32 .64 1.20 1.77 2.30 2.86 3.51 4.24 4.81 5.37 5.94 6.59 7.07 7.72 8.29 8.94 9.74 10.55 11.45 12.34
 .88 1.45 2.05 2.62 3.19 3.75 4.56 5.13 5.70 6.26 6.83 7.40 8.05 8.61 9.26 10.13 10.96 11.93 12.66

C 1.60
 A 1.57
 P 1.54
 A 1.51
 C 1.48
 I 1.45
 T 1.42
 Y 1.40
 C 1.37
 E 1.34
 L 1.31
 L 1.28
 V 1.25
 O 1.22
 L 1.19
 T 1.16
 A 1.13
 G 1.10
 E 1.07
 S 1.04
 C 1.01
 A 1.99
 L 1.96
 E 1.93
 L 1.90
 V 1.87
 O 1.84
 L 1.81
 T 1.78
 A 1.75
 G 1.72
 E 1.69
 S 1.66
 C 1.63
 A 1.61
 L 1.58
 E 1.55
 S 1.52
 C 1.49
 A 1.46
 L 1.43
 E 1.40
 S 1.37
 C 1.34
 A 1.31
 L 1.28
 E 1.25
 S 1.22
 C 1.20
 A 1.17
 L 1.14
 E 1.11
 S 1.08
 C 1.05
 A 1.02

1. 11. 21. 28. 37. 45. 54. 75. 82. 91. 99. 108. 118. 139. 156. 174. 190. 209. 224. 243. 259. 279. 303. 327. 354. 379.
 .11. .28. .45. .75. .91. .108. .125. .149. .166. .183. .199. .216. .234. .252. .269. .288. .315. .339. .367. .389.

TIME IN MINUTES
 CELLS INCLUDED V1 V2 V3 V4 V5

FIGURE 204

ORIGINAL PAGE IS
 OF POOR QUALITY

KEY
 * HIGH END DISCHARGE VOLTAGE
 + AVE END DISCHARGE VOLTAGE
 . LOW END DISCHARGE VOLTAGE
 ■ HIGH EOC
 X AVE EOC
 Y LOW EOC

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 50 WQEC/C 77-134
 TEMPERATURE 20
 AMPERE RATE 15
 GULTON CELLS

SERIAL 714, 715, 723, 740, 741
 PROJECT ATS 6

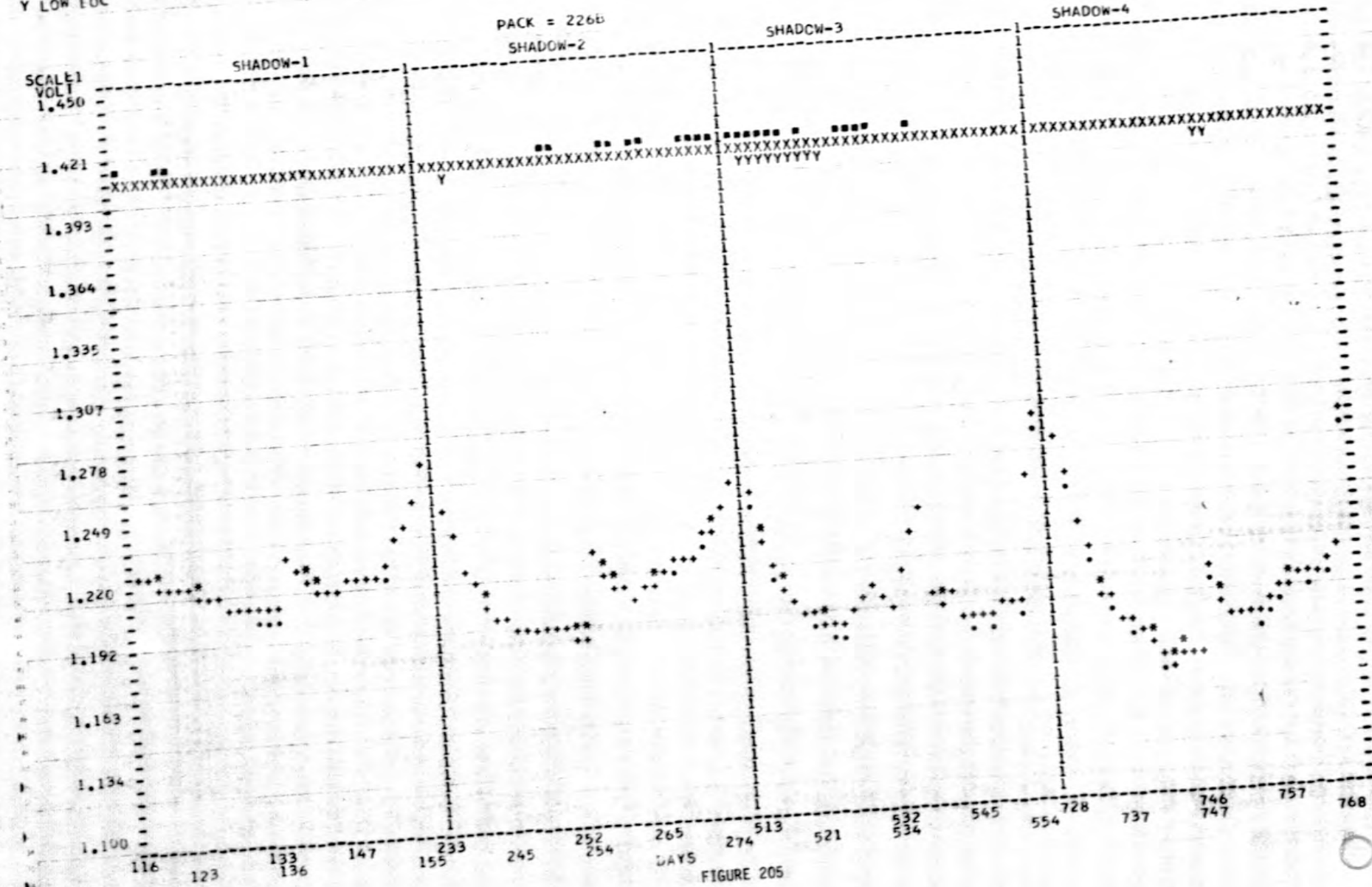


FIGURE 205

KEY
 * AHD
 • AHI-TOTAL

SYNCHRONOUS ORBIT SHADOW PLOT

WQEC/C 77-134
 DEPTH DISCHARGE 50
 TEMPERATURE 20
 AMPERE RATE 15
 GULTON CELLS
 SERIAL 714, 715, 723, 740, 741
 PROJECT ATS 6

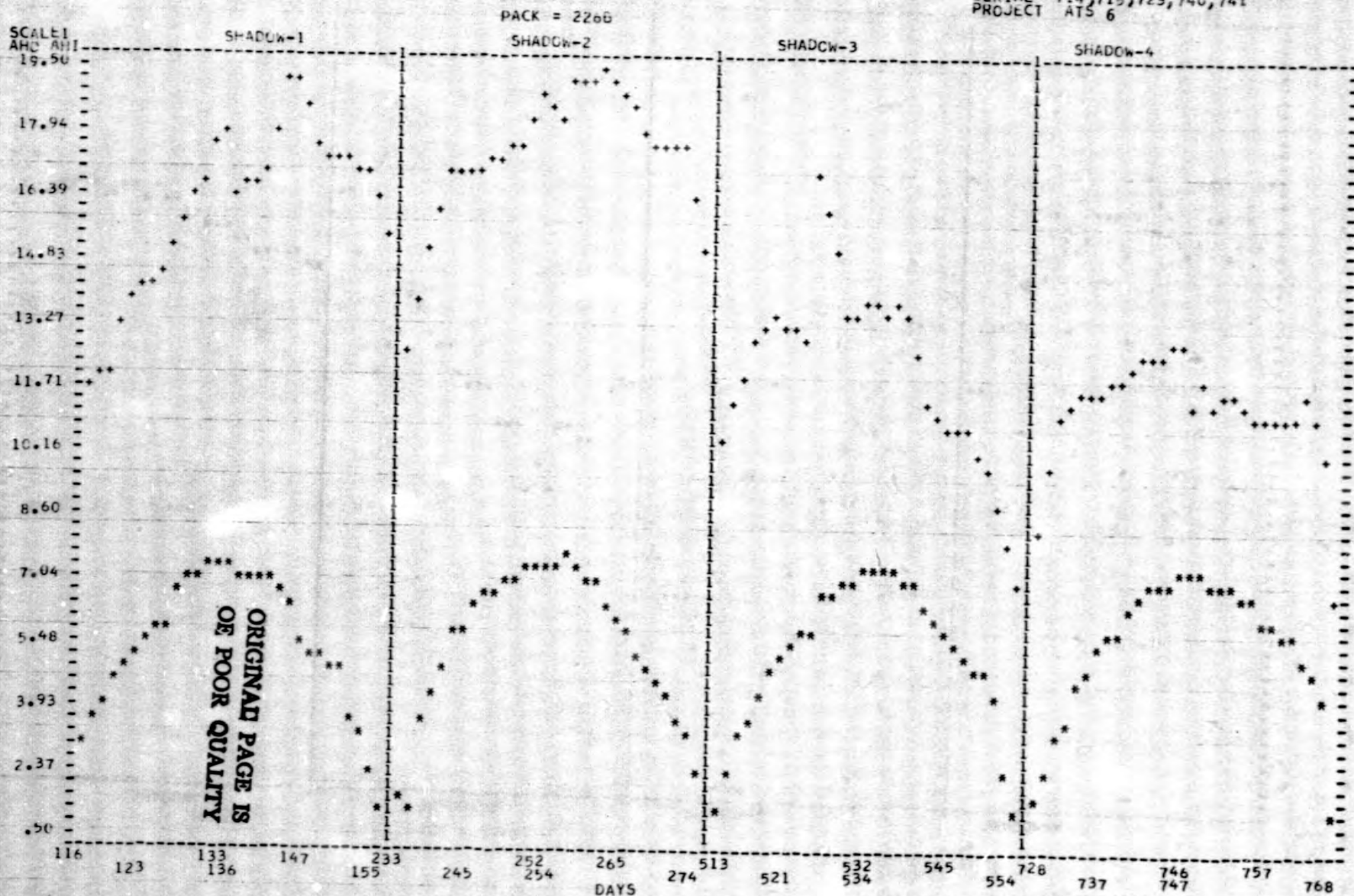


FIGURE 206

KEY
* END CHARGE CURRENT

SYNCHRONOUS ORBIT SHADOW PLOT

DEPTH DISCHARGE 50 WQEC/C 77-134
TEMPERATURE 20
AMPERE RATE 15
SERIAL 714, 715, 723, 740, 741
PROJECT ATS 6
GILTON CELLS

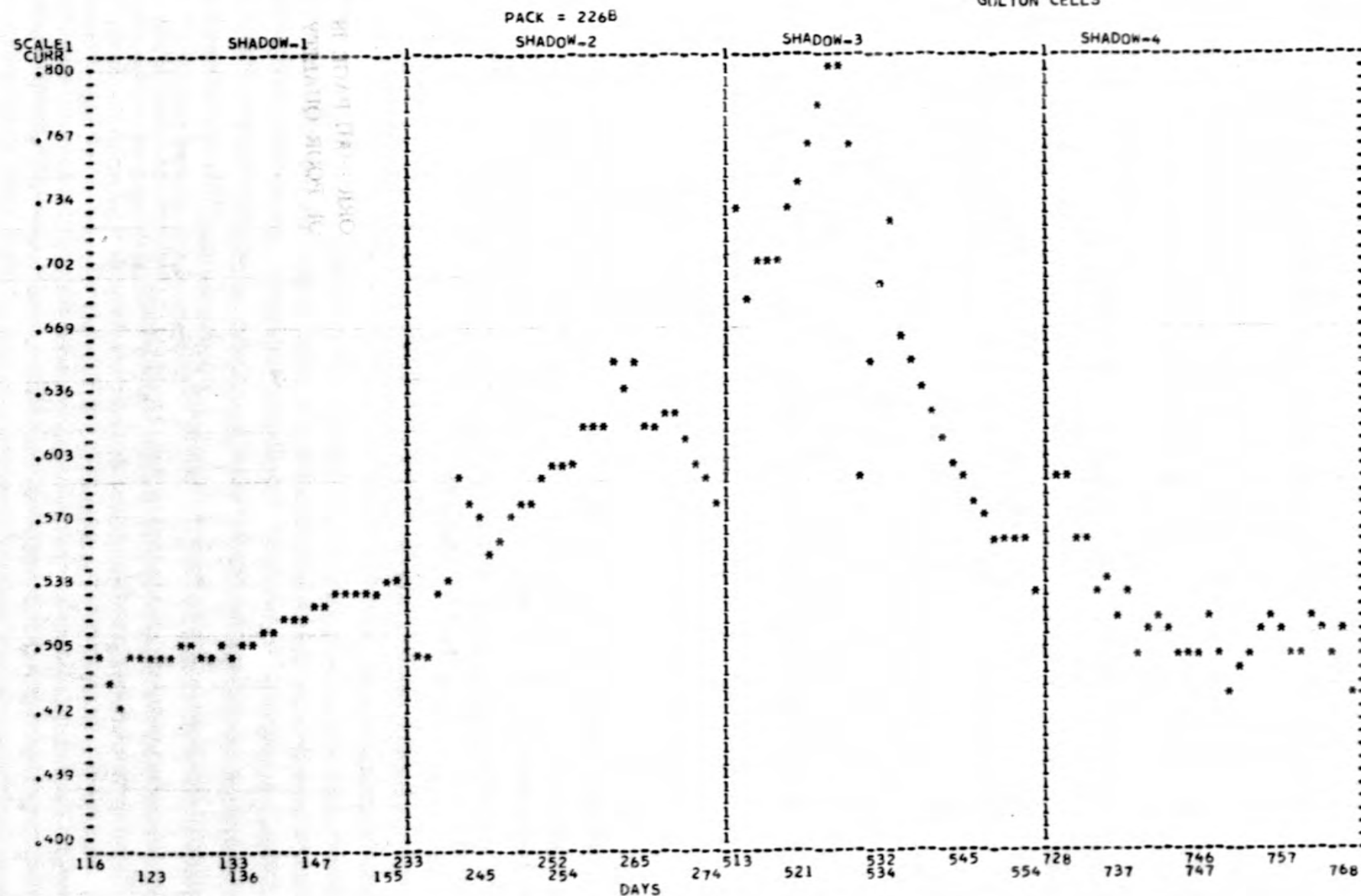


FIGURE 207

DATE OF RUN IS 09/10/76

PACK NUMBER IS 226B

Pre-cycling

PRECYCLING IS

CYCLE IS

2.

HTGH-V LOW-V

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HTGH-V | LOW-V |
|------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 1. | .000 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | .397 | 1.398 | 1.396 |
| 10. | .100 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | .397 | 1.398 | 1.396 |
| 20. | .200 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | .397 | 1.398 | 1.396 |
| 30. | .300 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | .397 | 1.398 | 1.396 |
| 40. | .400 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | .397 | 1.398 | 1.396 |
| 50. | .500 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | .397 | 1.398 | 1.396 |
| 60. | .600 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | .397 | 1.398 | 1.396 |
| 70. | .700 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | .397 | 1.398 | 1.396 |
| 80. | .800 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | .397 | 1.398 | 1.396 |
| 90. | .900 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | .397 | 1.398 | 1.396 |
| 100. | 1.000 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | .397 | 1.398 | 1.396 |
| 110. | 1.100 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | .397 | 1.398 | 1.396 |
| 120. | 1.200 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | .397 | 1.398 | 1.396 |
| 130. | 1.300 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | .397 | 1.398 | 1.396 |
| 140. | 1.400 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | .397 | 1.398 | 1.396 |
| 150. | 1.500 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | .397 | 1.398 | 1.396 |
| 160. | 1.600 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | .397 | 1.398 | 1.396 |
| 170. | 1.700 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | .397 | 1.398 | 1.396 |
| 180. | 1.800 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | .397 | 1.398 | 1.396 |

ORIGINAL PAGE IS
OF POOR QUALITY

DATE OF RUN IS 08/27/76

PACK NUMBER IS 226B

SHADOW PERIOD IS 1

CYCLE IS

134.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 13.00 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.190 | 1.191 | 1.188 |
| 13.01 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.189 | 1.190 | 1.186 |
| 13.02 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.188 | 1.189 | 1.185 |
| 13.03 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.188 | 1.188 | 1.184 |
| 13.04 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.186 | 1.188 | 1.183 |
| 13.05 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.185 | 1.187 | 1.182 |
| 13.06 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.184 | 1.186 | 1.180 |
| 13.07 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.183 | 1.185 | 1.179 |
| 13.08 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.182 | 1.184 | 1.178 |
| 13.09 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.181 | 1.183 | 1.176 |
| 13.10 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.179 | 1.181 | 1.174 |
| 13.11 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.178 | 1.180 | 1.173 |
| 13.12 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.176 | 1.179 | 1.171 |
| 13.13 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.174 | 1.177 | 1.168 |
| 13.14 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.172 | 1.175 | 1.166 |
| 13.15 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.170 | 1.174 | 1.163 |
| 13.16 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.168 | 1.172 | 1.160 |
| 13.17 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.165 | 1.170 | 1.156 |
| 13.18 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.163 | 1.167 | 1.150 |
| 13.19 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.159 | 1.165 | 1.143 |
| 13.20 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.154 | 1.162 | 1.130 |
| 13.21 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.147 | 1.159 | 1.107 |
| 13.22 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.137 | 1.155 | 1.075 |
| 13.23 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.120 | 1.142 | 1.053 |
| 13.24 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.098 | 1.132 | 1.065 |
| 13.25 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.088 | 1.113 | 1.052 |
| 13.26 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.052 | 1.085 | 1.025 |
| 13.27 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.008 | 1.058 | 1.000 |
| 13.28 | 1.2860 | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | 1.000 | 1.000 | 1.000 |

OK
 ALL PAGE IS
 OF FOUR QUARTERS

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PAGE 15

490

3.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| 849. | .249 | V1 | 1.326 | V2 | 1.326 | V3 | 1.325 | V4 | 1.325 | V5 | 1.326 | .000 | .000 | .000 |
| 856. | .993 | V1 | 1.295 | V2 | 1.296 | V3 | 1.293 | V4 | 1.293 | V5 | 1.294 | .000 | .000 | .000 |
| 905. | 1.981 | V1 | 1.267 | V2 | 1.269 | V3 | 1.267 | V4 | 1.267 | V5 | 1.268 | .000 | .000 | .000 |
| 915. | 2.969 | V1 | 1.244 | V2 | 1.247 | V3 | 1.245 | V4 | 1.245 | V5 | 1.248 | .000 | .000 | .000 |
| 925. | 3.957 | V1 | 1.229 | V2 | 1.232 | V3 | 1.230 | V4 | 1.230 | V5 | 1.230 | .000 | .000 | .000 |
| 934. | 4.945 | V1 | 1.216 | V2 | 1.219 | V3 | 1.218 | V4 | 1.217 | V5 | 1.218 | .000 | .000 | .000 |
| 944. | 5.933 | V1 | 1.203 | V2 | 1.206 | V3 | 1.203 | V4 | 1.203 | V5 | 1.204 | .000 | .000 | .000 |
| 953. | 6.921 | V1 | 1.190 | V2 | 1.192 | V3 | 1.193 | V4 | 1.190 | V5 | 1.191 | .000 | .000 | .000 |
| 1003. | 7.909 | V1 | 1.177 | V2 | 1.179 | V3 | 1.181 | V4 | 1.175 | V5 | 1.178 | .000 | .000 | .000 |
| 1013. | 8.897 | V1 | 1.159 | V2 | 1.162 | V3 | 1.156 | V4 | 1.156 | V5 | 1.158 | .000 | .000 | .000 |
| 1022. | 9.885 | V1 | 1.117 | V2 | 1.113 | V3 | 1.127 | V4 | 1.117 | V5 | 1.112 | .000 | .000 | .000 |
| 1032. | 10.872 | V1 | 1.055 | V2 | 1.058 | V3 | 1.069 | V4 | 1.068 | V5 | 1.060 | .000 | .000 | .000 |
| 1041. | 11.856 | V1 | 1.003 | V2 | 1.019 | V3 | 1.022 | V4 | 1.040 | V5 | 1.025 | .000 | .000 | .000 |
| 1046. | 12.348 | V1 | .961 | V2 | .999 | V3 | .998 | V4 | .032 | V5 | 1.010 | .000 | .000 | .000 |
| 1048. | 12.410 | V1 | .918 | V2 | .999 | V3 | .987 | V4 | .035 | V5 | 1.011 | .000 | .000 | .000 |

DATE OF RUN IS 03/20/76

TIME
729.
734.
739.
744.
749.
754.
759.
764.
769.
774.
779.
784.
789.
794.
799.
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989.
994.
999.

AMPS

CELL-V

CELL-V

CELL-V

CELL-V

CELL-V

CELL-V

CELL-V

CELL-V

CELL-V

CELL-V

CELL-V

CELL-V

PACK NUMBER IS 226B

SHADOW PERIOD IS

CYCLE IS

639.

AVE-V

LOW-V

17.

PAGE

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ORIGINAL PAGE 18
OF 200 QUALITY

DATE OF RUN IS 09/20/76

PACK NUMBER IS 226B

SHADOW PERIOD IS

CYCLE IS

639.

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PAGE 15

18.

[illegible]

DATE OF RUN IS 09/14/76

PACK NUMBER IS 226B

SHADOW PERIOD IS

CYCLF IS

773.

HIGH-V LOW-V

HIGH-V LOW-V

[illegible]

ORIGINAL PAGE IS
OF POOR QUALITY

773.

[illegible]

ORIGINAL PAGE IS
OF POOR QUALITY

22.

498

100

ORIGINAL PAGE IS
OF POOR QUALITY

DATE OF RUN IS 09/20/76
 PACK NUMBER IS 226B
 SHADOW PERIOD IS
 CYCLE IS
 863.
 WQEC/C 77-134
 PAGE IS 24.

| TIME | AMPS | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | CELL-V | AVE-V | HIGH-V | LOW-V | | | | | |
|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|------|------|-------|-------|-------|
| 1350. | 1.120 | V1 | .043 | V2 | .064 | V3 | .069 | V4 | .082 | V5 | .069 | .000 | .000 | .000 | 1.065 | 1.082 | 1.043 |
| 1355. | 1.120 | V1 | .037 | V2 | .058 | V3 | .072 | V4 | .077 | V5 | .063 | .000 | .000 | .000 | 1.059 | 1.077 | 1.037 |
| 1400. | 1.450 | V1 | .030 | V2 | .052 | V3 | .036 | V4 | .073 | V5 | .058 | .000 | .000 | .000 | 1.054 | 1.073 | 1.030 |
| 1405. | 1.610 | V1 | .023 | V2 | .040 | V3 | .050 | V4 | .070 | V5 | .052 | .000 | .000 | .000 | 1.048 | 1.070 | 1.023 |
| 1410. | 1.770 | V1 | .016 | V2 | .035 | V3 | .044 | V4 | .066 | V5 | .047 | .000 | .000 | .000 | 1.043 | 1.066 | 1.016 |
| 1414. | 1.930 | V1 | .007 | V2 | .032 | V3 | .038 | V4 | .063 | V5 | .042 | .000 | .000 | .000 | 1.037 | 1.063 | 1.007 |
| 1417. | 2.010 | V1 | .002 | V2 | .026 | V3 | .034 | V4 | .059 | V5 | .039 | .000 | .000 | .000 | 1.034 | 1.062 | 1.002 |
| 1422. | 2.170 | V1 | .991 | V2 | .020 | V3 | .020 | V4 | .057 | V5 | .034 | .000 | .000 | .000 | 1.028 | 1.059 | .991 |
| 1426. | 2.340 | V1 | .976 | V2 | .014 | V3 | .013 | V4 | .054 | V5 | .023 | .000 | .000 | .000 | 1.012 | 1.057 | .976 |
| 1431. | 2.500 | V1 | .958 | V2 | .011 | V3 | .008 | V4 | .053 | V5 | .021 | .000 | .000 | .000 | 1.007 | 1.054 | .958 |
| 1434. | 2.580 | V1 | .948 | V2 | .007 | V3 | .004 | V4 | .052 | V5 | .018 | .000 | .000 | .000 | 1.001 | 1.053 | .948 |
| 1436. | 2.660 | V1 | .925 | V2 | | V3 | | V4 | | V5 | | .000 | .000 | .000 | 1.001 | 1.052 | .925 |

| DATE OF RUN | IS OR/27/75 | AVE-DIS | LOW-DIS | HIGH-CHAR | AVE-CHAR | LOW-CHAR | AHO | AHI |
|-------------|-------------|---------|---------|-----------|----------|----------|-------|--------|
| 2220 | 11.16 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 3.130 | 11.730 |
| 2220 | 11.17 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 3.610 | 12.150 |
| 2220 | 11.18 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 4.080 | 12.020 |
| 2220 | 11.19 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 4.570 | 13.210 |
| 2220 | 11.20 | 2220 | 2220 | 4.11 | 4.11 | 4.10 | 4.840 | 13.810 |
| 2220 | 11.21 | 2220 | 2220 | 4.11 | 4.11 | 4.10 | 5.140 | 14.170 |
| 2220 | 11.22 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 5.510 | 14.230 |
| 2220 | 11.23 | 2220 | 2220 | 4.11 | 4.11 | 4.08 | 5.750 | 14.490 |
| 2220 | 11.24 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 5.910 | 15.170 |
| 2220 | 11.25 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 6.620 | 15.910 |
| 2220 | 11.26 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 6.960 | 16.410 |
| 2220 | 11.27 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 6.910 | 16.800 |
| 2220 | 11.28 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 7.200 | 17.510 |
| 2220 | 11.29 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 7.220 | 17.910 |
| 2220 | 11.30 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 7.230 | 18.510 |
| 2220 | 11.31 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 7.110 | 16.630 |
| 2220 | 11.32 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 6.950 | 16.750 |
| 2220 | 11.33 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 6.920 | 16.930 |
| 2220 | 11.34 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 6.910 | 17.810 |
| 2220 | 11.35 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 6.660 | 19.160 |
| 2220 | 11.36 | 2220 | 2220 | 4.11 | 4.11 | 4.10 | 6.410 | 19.190 |
| 2220 | 11.37 | 2220 | 2220 | 4.11 | 4.11 | 4.08 | 5.620 | 18.500 |
| 2220 | 11.38 | 2220 | 2220 | 4.11 | 4.11 | 4.08 | 5.240 | 17.500 |
| 2220 | 11.39 | 2220 | 2220 | 4.11 | 4.11 | 4.08 | 5.200 | 17.380 |
| 2220 | 11.40 | 2220 | 2220 | 4.11 | 4.11 | 4.08 | 4.960 | 17.300 |
| 2220 | 11.41 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 4.710 | 17.200 |
| 2220 | 11.42 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 3.760 | 17.100 |
| 2220 | 11.43 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 3.260 | 16.920 |
| 2220 | 11.44 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 2.490 | 16.380 |
| 2220 | 11.45 | 2220 | 2220 | 4.11 | 4.11 | 4.08 | 1.500 | 15.420 |
| 2220 | 11.46 | 2220 | 2220 | 4.11 | 4.11 | 4.07 | 1.600 | 12.600 |
| 2220 | 11.47 | 2220 | 2220 | 4.11 | 4.11 | 4.08 | 1.300 | 14.000 |
| 2220 | 11.48 | 2220 | 2220 | 4.11 | 4.11 | 4.06 | 3.600 | 15.200 |
| 2220 | 11.49 | 2220 | 2220 | 4.11 | 4.11 | 4.07 | 4.200 | 16.000 |
| 2220 | 11.50 | 2220 | 2220 | 4.11 | 4.11 | 4.07 | 4.900 | 17.100 |
| 2220 | 11.51 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 5.800 | 17.100 |
| 2220 | 11.52 | 2220 | 2220 | 4.11 | 4.11 | 4.07 | 5.900 | 16.900 |
| 2220 | 11.53 | 2220 | 2220 | 4.11 | 4.11 | 4.08 | 6.500 | 17.100 |
| 2220 | 11.54 | 2220 | 2220 | 4.11 | 4.11 | 4.08 | 6.700 | 17.200 |
| 2220 | 11.55 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 6.800 | 17.400 |
| 2220 | 11.56 | 2220 | 2220 | 4.11 | 4.11 | 4.07 | 7.000 | 17.600 |
| 2220 | 11.57 | 2220 | 2220 | 4.11 | 4.11 | 4.07 | 6.900 | 17.700 |
| 2220 | 11.58 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 6.200 | 18.100 |
| 2220 | 11.59 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 7.200 | 18.900 |
| 2220 | 11.60 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 7.500 | 18.500 |
| 2220 | 11.61 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 7.500 | 18.500 |
| 2220 | 11.62 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 7.500 | 18.500 |
| 2220 | 11.63 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 7.500 | 18.500 |
| 2220 | 11.64 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 7.500 | 18.500 |
| 2220 | 11.65 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 7.500 | 18.500 |
| 2220 | 11.66 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 7.500 | 18.500 |
| 2220 | 11.67 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 7.500 | 18.500 |
| 2220 | 11.68 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 7.500 | 18.500 |
| 2220 | 11.69 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 7.500 | 18.500 |
| 2220 | 11.70 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 7.500 | 18.500 |
| 2220 | 11.71 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 7.500 | 18.500 |
| 2220 | 11.72 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 7.500 | 18.500 |
| 2220 | 11.73 | 2220 | 2220 | 4.11 | 4.11 | 4.09 | 7.500 | 18.500 |

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| DATE OF RUN IS OB/27/76 | IS HIGH | AVE-DIS | LOW-DIS | HIGH-CHAR | AVE-CHAR | LOW-CHAR | AHO | AHI |
|-------------------------|---------|---------|---------|-----------|----------|----------|-------|--------|
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 2.510 | 15.000 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 1.490 | 10.580 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 2.470 | 11.470 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 3.210 | 12.010 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 3.700 | 13.100 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 4.220 | 13.200 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 4.940 | 13.470 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 5.180 | 13.300 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 5.420 | 13.200 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 5.660 | 13.000 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 5.840 | 12.040 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 6.680 | 16.000 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 6.670 | 15.090 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 6.940 | 13.640 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 6.930 | 13.700 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 7.430 | 13.830 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 7.370 | 13.770 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 7.380 | 13.730 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 7.250 | 13.910 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 8.960 | 12.680 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 8.940 | 11.500 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 6.410 | 11.200 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 6.170 | 10.800 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 5.730 | 10.900 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 5.480 | 10.700 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 5.240 | 10.200 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 5.010 | 9.700 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 4.770 | 9.000 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 4.230 | 8.600 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 4.490 | 8.600 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 1.480 | 7.050 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 1.610 | 8.340 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 2.460 | 9.700 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 3.190 | 11.010 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 3.700 | 11.500 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 4.670 | 11.730 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 4.920 | 11.700 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 5.410 | 11.650 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 5.640 | 11.900 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 5.930 | 12.140 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 6.400 | 12.300 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 6.710 | 12.530 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 6.950 | 12.700 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 6.920 | 12.800 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 7.000 | 12.970 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 7.420 | 13.000 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 7.410 | 11.350 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 7.410 | 12.010 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 7.160 | 11.550 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 6.920 | 11.600 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 6.910 | 11.770 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 6.670 | 11.400 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 6.680 | 11.200 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 6.210 | 11.200 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 6.130 | 11.200 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 5.950 | 11.130 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 5.690 | 11.580 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 5.200 | 11.090 |
| 22600 | 274. | 255 | 249 | 253 | 411 | 411 | 4.960 | |

DATE 2260 IN
PAGE 2260 IN
CF DAY 766
15 HIGH-15
08/27/76

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VI. Analysis data is contained in Tables II and III.

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TABLE II
Chemical Analysis Data
(Analysis performed at Crane)

| Pack
Number | MANF | AH | Cell
Number | Serial
Number | Shadow
Periods
Completed | Total Meq*
KOH Per
Extract (avg) | Total Meq
K ₂ CO ₃ Per
Extract (avg) | Meq KOH
Per
Separator
Patch** | Meq K ₂ CO ₃
Per
Separator
Patch | Total
Volume (CC)
Per Patch | Wet
Weight
(g)*** | Dry
Weight
(g)*** | Analysis
Performed |
|----------------|------|----|----------------|------------------|--------------------------------|--|--|--|---|-----------------------------------|-------------------------|-------------------------|-----------------------|
| 204B | GE | 6 | 2 | 7-12 | 12 | 36.490 | 101.069 | 0.47 | 0.69 | 1.47 | .3807 | .1841 | Crane |
| 212A | GE | 12 | 5 | AB9-20 | 11 | 199.752 | 86.218 | 0.15 | 0.79 | 2.56 | .6359 | .3814 | Crane |

* meq is the abbreviation of milliequivalents.

** The separator patch data is an average of three patches sampled. One from the first third of the plate stock, one from the center and one from the last third.

*** Wet weight is determined immediately following removal from the cell case and prior to leaking in water overnight; dry weight is determined following titration and air drying overnight.

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